# THE POLYCHAET FAUNA OF SOUTH AFRICA

## PART 5. ERRANT SPECIES DREDGED OFF CAPE COASTS

by

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Contents



### Introduction

Earlier papers in this series have dealt with the estuaries and intertidal fauna of Moçambique, Natal and Cape Coasts. This is the first account of species which occur below tide-marks and it will be evident from the long lists of collecting stations that a great deal of field-work has been done since the work first started in 1947. Actually the prime object of this dredging survey is to determine distribution patterns around the southern part of Africa and not only the Polychaeta but the whole benthonic fauna is being surveyed. Many systematic reports on the other groups have been published and further work is in progress. All the records are being entered on card catalogues and when the area has been adequately covered a biogeographic analysis will be attempted. Meanwhile many new species are being discovered.

The material has been obtained from many sources. I am indebted to the Director of the Division of Fisheries for dredgings brought in by R.S. *Africana II* and *Palinurus* and I also wish to thank Messrs. Irvin and Johnson for allowing students to collect specimens on board commercial trawlers. The Hydrographic Section of the South African Navy generously provided facilities for dredging on board S.A.S. *Natal* during three cruises between Port Elizabeth and Durban and Dr. Nafe of the Lamont Geological Observatory kindly allowed me facilities during the cruise of the *Vema* between Cape Town and Durban. To all of these organizations I tender my thanks but the bulk of the material has been collected by members of my own department working on small boats during university vacations. In this way rich hauls were made in Lamberts Bay, Saldanha Bay, Table Bay, False Bay, Mossel Bay and Algoa Bay. The expenses of such trips were covered partly by grants from the Staff Research Fund of the University and partly by grants from the South African Council of Scientific and Industrial Research. The latter organization has also paid the

salary of my research assistant for many years and Dr. John Croil Morgans made some very valuable collections by diving in False Bay during his tenure of the post. A full report of his diving survey has recently been published elsewhere (Morgans 1959).

Earlier records of errant polychaets dredged off the Cape coasts will be found in McIntosh (1885 and 1904), Ehlers (1908 and 1913), Ramsay (1914), McIntosh (1925), Monro (1930 and 1936), Day (1934) and Treadwell (1943). The species recorded by Augener (1918 and 1931) from dredgings off South West Africa must be included for there can be no doubt that this area has a similar fauna to the Western Cape.

Altogether these earlier workers recorded 74 species of errant polychaets from below tide-marks. The present paper contains new records, notes or full descriptions of 171 species. 61 of them are species known from the earlier dredgings, 42 are species previously known only from the shore, 34 species are new records for South Africa, 22 are new species and 12 are doubtful species or new varieties. The full total of species now known from dredgings around the Cape or South West Africa is 184 and for the sake of convenience, the 13 species recorded by earlier workers and not included in the systematic section of this paper is given below.

**Aphroditidae**

*Eunoe assimilis* McI.—McIntosh 1925
*Eunoe macrophthalma* Mc.I.—McIntosh 1925
*Lagisca hubrechti* McI.—Monro 1930
*Macellicephala mirabilis* McI.—McIntosh 1905, 1925
*Polynoe caput-leonis* McI.—McIntosh 1925
*Panthalis oerstedi* var. *capensis* McI.—McIntosh 1925
*Leanira hystricis* Ehl.—McIntosh 1925

**Hesionidae**

*Magalia* (=*Syllidia*) *capensis* (McI.)—McIntosh 1925
?*Irmula spissipes* Ehl.—Augener 1918

**Syllidae**

*Sphaerosyllis perspicax* Ehl.—Augener 1918

**Nereidae**

*Nereis pelagica* Linn.—Ramsay 1914

**Eunicidae**

*Eunice grubei* Grav.—Ehlers 1908a
*Onuphis quadricuspis* Sars—McIntosh 1925

The other names which occur in the literature are synonyms of species described in this paper. Many of them are misidentifications of European species and one of my main tasks has been to eliminate these names from the South African faunistic lists. Unfortunately the descriptions are often incomplete and it has been necessary to examine the original material. During 1952 the C.S.I.R. provided me with funds to visit the British Museum and examine the South African material housed there and to compare my own collections with the types.

I wish to thank the Director of the British Museum and Mr. Norman Tebble of the Annelid Section for their kindness and help on this occasion and during a subsequent visit in 1958. I also wish to thank the Directors of the Scottish National Museum, the Swedish State Museum, the Hamburg Museum, the Berlin Museum and the U.S. National Museum for sending me South African specimens lodged in their respective institutions.

One of the most important results of this sort of work was a general review of the genus *Diopatra*, which has been reported, not only from South Africa, but also from many other parts of the world under the name *Diopatra neapolitana*. An examination of material from the type locality (Naples) showed that the great majority of the records are misidentifications. A general discussion of *Diopatra* will be found on p. 338; the point which is stressed here is that similar work on difficult genera such as *Eulalia*, *Exogone*, *Autolytus*, and *Lumbrineris* suggests that a re-examination of type material or, where this is lacking, of material from the type locality is well worth while. It will lead to the solution of many anomalies of distribution and it now seems very probable that species of Polychaeta are by no means as widespread as has been supposed. Distribution patterns in this group will probably be found to follow the lines which Ekman (1953) has proposed for the bulk of the marine fauna.

There is no doubt that many new species of errant polychaets await discovery in Cape waters. The University now has its own research vessel and almost every dredging brings up species new to the area or new to science and the deeper waters off the Eastern Cape have hardly been explored. For this reason no systematic key is included in this paper although one has been produced and is constantly being revised. Further work on errant species must wait until the bulk of the sedentary species has been described. This will form the subject of the next paper in this series.

## Station Lists

I must apologize for not giving the full station data below each species. It is realized that this causes a certain amount of inconvenience but space does not permit the full collection data to be repeated in this way. Full details for each dredging or diving station are given below, and under each species will be found only the station number with the number of specimens in brackets, e.g. AFR.728(1) under *Aphrodite alta* means that 1 specimen was obtained by R.S. *Africana II* and reference to the station list will give full details of date,

position, depth and type of bottom in the conventional abbreviated form. The sequence of the station lists is from the west or Atlantic coasts around the Cape towards the Eastern Province and Natal although some of the Africana (AFR) and Trawler (TRA) stations cover a wide range of coastline. In some cases the number of specimens obtained at a particular station was not accurately counted but was noted as common indicated as (c), fairly common (fc), or merely present (p). These letters in brackets are thus shown against the relevant dredging stations.

The types described in this paper will be deposited in the South African Museum, Cape Town.

The Trustees of the Museum gratefully acknowledge the grant in aid of publication of this paper received from the South African Council for Scientific and Industrial Research.

## Station Data

Lambert's Bay Dredging (LAM)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| LAM. 1 | 16.1.57 | 32.04.3S/18.18.2E | 15 | S. |
| LAM. 4 | do. | do. | do. | do. |
| LAM. 5 | 17.1.57 | 32.04.5S/18.18.E | 17 | Sh.R. |
| LAM. 6 | 17.1.57 | 32.04.7S/18.18.5E | 9 | S. R. |
| LAM. 8 | 18.1.57 | 32.05S/18.17.9E | 23 | S. Sh. R. |
| LAM. 10 | 17.1.57 | 32.04.7S/18.17.7E | 23 | S. Sh. |
| LAM. 11 | 18.1.57 | 32.05S/18.17.7E | 29 | S. Sh. |
| LAM. 13 | 19.1.57 | 32.04S/18.18.1E | 18 | R. |
| LAM. 15 | 18.1.57 | 32.05S/18.17.7E | 17 | S. Sh. R. |
| LAM. 16 | 17.1.57 | 32.04.8S/18.18.2E | 11 | S. |
| LAM. 17 | 17.1.57 | 32.05.3S/18.17.4E | 23 | S. |
| LAM. 18 | 18.1.57 | 32.04.8S/18.17.8E | 17 | R. |
| LAM. 19 | do. | do. | do. | do. |
| LAM. 22 | 17.1.57 | 32.07.5S/18.17.6E | 20 | S. R. |
| LAM. 23 | 17.1.57 | 32.04.1S/18.18.6E | 15 | S. Sh. |
| LAM. 24 | 16.1.57 | 32.04.6S/18.18.2E | 17 | R. |
| LAM. 25 | 17.1.57 | 32.04.2S/18.18.4E | 8 | S. Sh. R. |
| LAM. 26 | 18.1.57 | 32.04.9S/18.17.5E | 27 | S. Sh. R. |
| LAM. 27 | 16.1.57 | 32.04.1S/18.18.4E | 16 | R. |
| LAM. 31 | 19.1.57 | 32.05.1S/18.17.7E | 20 | R. |
| LAM. 33 | 19.1.57 | 32.05.2S/18.17.5E | Plankton sample. | |
| LAM. 35 | 19.1.57 | 32.05.5S/18.17.7E | 27·5 | Sh. R. |
| LAM. 38 | 19.1.57 | 32.05.4S/18.17.7E | 27 | S. Sh. |
| LAM. 39 | 19.1.57 | 32.05.4S/18.17.6E | 30 | S. Sh. |
| LAM. 40 | 19.1.57 | 32.05.5S/18.17.6E | 28 | S. Sh. |
| LAM. 41 | 21.1.57 | 32.05S/18.17.7E | 20 | S. Sh. |
| LAM. 43 | 21.1.57 | 32.04.9S/18.18.2E | 13·5 | S. R. |
| LAM. 44 | 21.1.57 | 32.04.7S/18.17.6E | 20 | R. |
| LAM. 45 | 21.1.57 | 32.05S/18.18.2E | 8 | S. R. |
| LAM. 47 | 21.1.57 | 32.04.4S/18.17.7E | 23 | R. |
| LAM. 48 | 22.1.57 | 32.04S/18.17.9E | 27 | S. Sh. |
| LAM. 49 | 21.1.57 | 32.04.8S/18.18.1E | 10 | S. R. |
| LAM. 51 | 23.1.57 | 32.08.5S/18.17.7E | 16·5 | S. R. |

LAMBERT'S BAY DREDGING (LAM)

| *No.* | *Date* | *Position* | *Dept* (Metres) | *Bottom* |
|---|---|---|---|---|
| LAM. 52 | 21.1.57 | 32.04.7S/18.18.2E | 17 | S. |
| LAM. 54 | 23.1.57 | 32.09S/18.17.8E | 19 | R. |
| LAM. 55 | 22.1.57 | 32.04.2S/18.17.7E | 27 | S. Sh. |
| LAM. 56 | 23.1.57 | 32.11S/18.18.1E | 18·5 | S. |
| LAM. 57 | 23.1.57 | 32.10S/18.18.1E | 25 | S. R. |
| LAM. 59 | 23.1.57 | 32.09S/18.18E | 16 | S. R. |
| LAM. 60 | 23.1.57 | 32.02S/18.18E | 27·5 | f.S. |
| LAM. 61 | 23.1.57 | 32.12S/18.17.9E | 28·5 | S. Sh. R. |
| LAM. 63 | 23.1.57 | 32.01.5S/18.18E | 25 | Sh. R. |
| LAM. 64 | 23.1.57 | 32.01.5S/18.17.8E | 29 | S. |
| LAM. 66 | 19.1.57 | 32.05.5S/18.17.7E | 27·5 | Sh. R. |

SALDANHA BAY DREDGING (SB)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| SB.113 | 13.7.46 | 33.00.7S/17.59.8E | 10 | S. |
| SB.114 | do. | 33.00.4S/17.57.5E | 5 | S. |
| SB.115 | do. | do. | do. | do. |
| SB.116 | do. | 33.00.1S/17.59.2E | 7 | S. |
| SB.117 | do. | 33.00.3S/17.58.5E | 7 | S. R. |
| SB.118 | 14.7.46 | 33.01.5S/17.58E | 9 | S. Sh. R. |
| SB.119 | do. | 33.02.8S/18.01.2E | 13 | R. |
| SB.120 | do. | 33.03.4S/18.01.8E | 9 | S. |
| SB.121 | do. | 33.05S/18.01.4E | 7 | Sh. |
| SB.122 | do. | 33.04.9S/18.00.4E | 5 | S.R. |
| SB.125 | 9.4.53 | 33.01.4S/17.57.7E | 11 | S. |
| SB.127 | do. | 33.04.6S/17.59.8E | 5·5 | S. R. |
| SB.129 | do. | 33.04.5S/18.00E | 6·5 | do. |
| SB.130 | do. | 33.04.6S/18.00.6E | 6 | do. |
| SB.132 | 26.3.53 | 33.04S/17.59.3E | 8·5 | do. |
| SB.135 | 6.5.54 | 33.03S/17.58.6E | 22 | S. |
| SB.136 | do. | 33.03S/18.00.5E | 14·5 | do. |
| SB.143 | 28.4.47 | 33.05.1S/18.01.2E | 6 | S. Alg. |
| SB.144 | do. | 33.05.3S/18.01E | 5·5 | S. |
| SB.145 | do. | 33.04.8S/18.00.5E | 7 | S. Alg. |
| SB.173 | 2.5.58 | 33.05.1S/18.01.5E | 4 | S. R. |
| SB.175 | 27.4.59 | 33.02.8S/18.00.6E | 15 | Sh. kh. S. R. |
| SB.177 | do. | 33.03S/18.00.9E | do. | do. |
| SB.179 | 28.4.59 | 33.03.6S/18.00.4E | do. | S. Sh. R. |
| SB.180 | do. | 33.03.5S/17.58.5E | 25·5 | bl. M. |
| SB.181 | do. | 33.01.6S/17.59.3E | 13 | Sh. S. |
| SB.183 | 29.4.59 | 33.02.5S/17.58.7E | do. | co. S. Sh. |
| SB.184 | 29.4.59 | 33.01.5S/17.58.8E | do. | kh. S. |
| SB.189 | 30.4.59 | 33.01.1S/18.00.3E | 9·5 | do. |
| SB.193 | 30.4.59 | 33.00.7S/17.58.4E | 8 | do. |
| SB.195 | 1.5.59 | 33.03.5S/17.59.2E | 20 | R. S. |
| SB.197 | do. | 33.04.4S/17.56.4E | 35 | R. |
| SB.199 | do. | 33.01.7S/18.01.4E | 9 | kh. S. |
| SB.202 | 2.5.59 | 33.03.5S/17.57.5E | 31 | do. |
| SB.203 | do. | 33.05.5S/17.55.5E | 56·5 | kh. M. |
| SB.205 | do. | 33.03.6S/17.56.4E | 40 | kh. M. Sh. |
| SB.207 | do. | 33.02.5S/17.57.5E | 27·5 | S. Sh. |
| SB.208 | do. | 33.01.9S/17.56.3E | 15 | kh. S. Sh. |

LANGEBAAN LAGOON DREDGING (LB)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| LB.155 | 15.7.46 | 33.07.1S/18.02.4E | 2 | f. S. |
| LB.158 | do. | 33.09S/18.04.2E | 4 | do. |
| LB.159 | do. | 33.10S/18.04.8E | 4·5 | f. S. M. |
| LB.160 | do. | 33.06.4S/18.01.9E | 8 | S. Sh. |
| LB.161 | 16.7.46 | 33.05.6S/18.00.8E | 5 | Sh. R. |
| LB.169 | 24.4.49 | 33.10.5S/18.03.8E | 2 | f. S. |
| LB.190 | do. | 33.11.3S/18.05.5E | 0–2 | f. S. M. |
| LB.191 | do. | do. | do. | do. |
| LB.239 | 2.5.51 | 33.07S/18.02.7E | 2 | f. S. |
| LB.299 | 5.5.51 | 33.06.8S/18.01E | 2·5 | S. Sh. |
| LB.300 | do. | 33.07.6S/18.02.3E | 3 | S. |
| LB.323 | do. | 33.06.8S/18.01E | 2·5 | S. Sh. |
| LB.363 | do. | 33.07.1S/18.02.7E | 4 | S |
| LB.364 | do. | 33.05.9S/18.01.7E | 5 | S. Sh. |
| LB.380 | 7.5.53 | 33.06.3S/18.01E | 4·5 | do. |
| LB.382 | do. | 33.05.5S/18.01.6E | 12·5 | do. |
| LB.391 | 8.5.53 | 33.07.9S/18.02.1E | 2·5 | f. S. |
| LB.456 | 2.5.55 | 33.07.7S/18.02.4E | 4 | S. Sh. |
| LB.472 | 6.5.55 | 33.07.4S/18.02.5E | 3·5 | do. |
| LB.496 | 3.5.56 | 33.05.7S/18.01E | 5 | Gr. R. |

TABLE BAY DREDGING (TB)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| TB.301 | 4.8.46 | 33.49.5S/18.27.5E | 12·8 | S. Sh. R. |
| TB.302 | 11.2.47 | 33.48.3S/18.24E | 11 | S. St. |
| TB.303 | do. | 33.47.5S/18.24.3E | 19·5 | S. Sh. St. |
| TB.304 | do. | 33.48S/18.24.3E | 16 | Sh. Gr. |
| TB.305 | 26.6.47 | 33.52.7S/18.29.7E | 9 | S. St. |
| TB.306 | 3.7.47 | 33.50.1S/18.27.8E | 17 | Sh. R. |
| TB.307 | do. | 33.50.3S/18.28E | 15·5 | R. Sh. |
| TB.308 | do. | 33.51.2S/18.27.3E | 23 | S.R. |
| TB.309 | do. | 33.52.7S/18.26.8E | 20·5 | R. |
| TB.310 | 25.11.48 | 33.48S/18.21E | 16·5 | S. |
| TB.312 | 15.9.49 | 34.05S/18.21E | 11 | do. |
| TB.313 | 25.10.46 | 33.52S/18.28E | 17 | S. Sh. |
| TB.314 | 15.12.57 | 33.48.6S/18.24.6E | 15 | Sh. St. |
| TB.315–333 | do. | do. | do. | do. |

SHIPS' HULLS AND EXPERIMENTAL PLATES SUBMERGED IN TABLE BAY DOCKS (SH)

| *Code No.* | *Date* | *Remarks.* |
|---|---|---|
| SH. 69 | 12.11.46 | *Norfolk* from India and east coast of Africa. |
| SH. 71 | 17.4.46 | *Natal*—from India and east coast of Africa. |
| SH. 74 | 18.4.46 | *Windward*—local wooden yacht 9 months in water. |
| SH.134 | 21.1.47 | *Empire Liddell*—local ship 1 month in water. |
| SH.168 | 1.4.47 | Experimental plate submerged for 120 days. |
| SH.204 | 27.5.47 | Experimental plate submerged for 175 days. |
| SH.277 | 4.9.47 | Experimental plate submerged for 275 days. |
| SH.324 | 6.2.48 | Barge working in Table Bay. |
| SH.366 | 2.12.48 | Wooden *Teredo* trap submerged for ? days. |
| SH.376 | 26.1.49 | Experimental plate submerged for 96 days. |
| SH.393 | 16.3.49 | Wooden frame submerged for 94 days. |
| SH.400 | do. | Experimental plate submerged for 7 months 2 days. |

SHIP'S HULLS AND EXPERIMENTAL PLATES SUBMERGED IN TABLE BAY DOCKS (S.H.)

| *Code No.* | *Date* | *Remarks.* |
|---|---|---|
| SH.415 | 14.2.49 | Wooden frame submerged for over 1 year. |
| SH.427 | 15.12.49 | Experimental barge 14 months in water. |
| SH.428 | 29.7.53 | Scraping from submerged caisson. |
| SH.430 | 28.7.58 | *Leeukop*—local wooden trawler. 8½ months in water. |

WEST COAST DREDGING (WCD)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| WCD. 3 | 25.2.59 | 34.09.8S/18.16.5E | 78 | R. |
| WCD. 5 | do. | 34.09S/18.14.8E | 110 | bl. S. M. |
| WCD. 8 | 24.3.59 | 34.09.35S/18.17.5E | 43 | R. |
| WCD.13 | do. | 34.09.4S/18.16.5E | 75 | do. |
| WCD.15 | 24.4.59 | 33.04.3S/17.54.7E | 51 | kh. M. |
| WCD.19 | 29.4.59 | 33.05.6S/17.54.5E | 64 | do. |
| WCD.21 | 30.4.59 | 33.04.5S/17.55.5E | 49 | do. |
| WCD.23 | 1.5.59 | 33.06.4S/17.53.7E | 79 | do. |
| WCD.26 | do. | 33.06.5S/17.55.4E | 86 | d. gr. M. |
| WCD.28 | 2.5.59 | 33.05.5S/17.56.4E | 42 | kh. M. |

FALSE BAY DREDGING (FB)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| FB.301 | 8.7.46 | 34.08S/18.27E | 22 | S. Pyura. |
| FB.302 | 8.9.46 | 34.08.5S/18.26.5E | 8 | S. |
| FB.305 | 12.11.46 | 34.08S/18.27E | 12 | S. Sh. |
| FB.306 | 24.11.46 | 34.09.3S/18.27.7E | 22 | S. Sh. Alg. |
| FB.307 | 22.2.47 | 34.07.5S/18.31E | 27·5 | R. |
| FB.308 | do. | 34.08S/18.31.5E | do. | f. S. Sh. |
| FB.309 | do. | 34.07.5S/18.29.3E | 19·5 | S. Sh. |
| FB.310 | 21.4.47 | 34.08S/18.32E | 27·5 | S. |
| FB.311 | 28.4.47 | 34.10S/18.27.8E | 24 | S. lithoth. |
| FB.312 | do. | 34.09.5S/18.27E | 17 | do. |
| FB.313 | 18.6.47 | 34.08S/18.29E | 25 | S. Sh. |
| FB.314 | 8.9.46 | 34.09S/18.27.7E | 14 | S. *Pyura* |
| FB.316 | 29.4.48 | 34.09S/18.28E | 23 | S. |
| FB.317 | do. | 34.09.5S/18.28.3E | 22 | do. |
| FB.318 | do. | 34.10.2S/18.27E | 27 | do. |
| FB.319 | do. | 34.09.2S/18.26.8E | 22 | do. |
| FB.320 | 26.9.48 | 34.08S/18.29.6E | 18 | S. Sh. |
| FB.321 | do. | 34.08S/18.31E | 24 | do. |
| FB.322 | do. | 34.07S/18.29E | 19 | R. S. Sh. |
| FB.323 | 30.1.47 | 34.10S/18.29.5E | 30 | f. S. |
| FB.324 | do. | 34.09S/18.29.5E | 25 | S. Sh. |
| FB.325 | 9.3.50 | 34.08.5S/18.27E | 14 | S. *Pyura* |
| FB.326 | 5.4.50 | 34.08.9S/18.27.4E | 15 | do. |
| FB.327 | 27.8.51 | 34.09.6S/18.26.6E | 17 | R. |
| FB.328 | do. | 34.09.8S/18.26.1E | ?9 | S. |
| FB.329 | do. | 34.10.2S/18.26.2E | 14 | S. Sh. |
| FB.330 | do. | 34.10.1S/18.26.1E | 9 | S. |
| FB.331 | do. | 34.10S/18.26.1E | 10 | R. S. |
| FB.332 | do. | 34.09.3S/18.26.4E | 11 | do. |
| FB.333 | 20.9.50 | Off St. James | 16·4 | S. R. |
| FB.334 | 26.9.48 | 34.07.5S/18.29E | 22 | S. Sh. |

False Bay Dredging (FAL)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| FAL. 5 | 22.2.52 | 34.09.5S/18.35E | 35 | S. Sh. |
| FAL. 8 | do. | 34.08.3S/18.35.3E | 24 | R. |
| FAL. 15 | 5.3.52 | S.E. Oatland Pt. | 8–9 | R. S. |
| FAL. 16 | do. | do. | do. | do. |
| FAL. 17 | do. | do. | do. | do. |
| FAL. 21 | do. | 34.13S/18.28E (plankton) | 11–12 | S. Sh. |
| FAL. 22 | do. | do. | do. | do. |
| FAL. 23 | do. | do. | do. | do. |
| FAL. 26 | do. | 34.13S/18.29E | 15–21 | S. Sh. R. |
| FAL. 27 | do. | do. | do. | do. |
| FAL. 29 | do. | 34.13S/18.29E | 28 | S. Sh. |
| FAL. 30 | do. | 34.12S/18.29E | 33–36 | Sh. |
| FAL. 31 | do. | do. | do. | do. |
| FAL. 34 | 18.6.52 | 34.05S/18.44E | 7 | S. R. |
| FAL. 43 | 25.6.52 | 34.09.6S/18.49.2E | 21·5 | do. |
| FAL. 44 | do. | do. | do. | do. |
| FAL. 50 | do. | 34.09.3S/18.49.6E | 18 | R. S. |
| FAL. 51 | do. | do. | do. | do. |
| FAL. 56 | do. | 34.09.4S/18.50.8E | 8 | R. |
| FAL. 57 | do. | do. | do. | do. |
| FAL. 58 | do. | 34.09.4S/18.50.4E | 12 | S. R. |
| FAL. 63 | 29.7.52 | 34.17.5S/18.49.2E | 22 | S. |
| FAL. 65 | do. | 34.17.3S/18.48.7E | 37–38 | S. Sh. |
| FAL. 69 | do. | 34.17.2S/18.49.4E | 16–19 | R. |
| FAL. 70 | do. | do. | do. | do. |
| FAL. 80 | do. | 34.16.5S/18.49.5E | 14–17 | do. |
| FAL. 81 | do. | do. | do. | do. |
| FAL. 82 | do. | do. | do. | do. |
| FAL. 95 | 17.9.52 | 34.10.6S/18.47.3E | 36 | S. Gr. R. |
| FAL.103 | 22.2.52 | 34.08.3S/18.35.3E | 24 | R. |
| FAL.104 | 25.6.52 | 34.09.4S/18.50.4E | 12 | S. R. |
| FAL.105 | 5.3.52 | 34.13S/18.29E | 15–21 | S. Sh. R. |
| FAL.106 | 17.9.52 | 34.10.6S/18.47.3E | 36 | S. Gr. R. |
| FAL.107 | 23.1.53 | 34.09.4S/18.51.7E | 1·5–2·5 | S. |
| FAL.110 | do. | 34.09.3S/18.51E | 8–12 | R. S. |
| FAL.111 | 27.1.53 | Windmill Beach (diving) | 4–5 | R. |
| FAL.113 | do. | do. | do. | do. |
| FAL.114 | do. | do. | do. | do. |
| FAL.117 | 12.2.53 | Simons Bay | 23·5 | Lithoth. |
| FAL.122 | 17.2.53 | Glencairn (diving) | ?7 | R. |
| FAL.126 | do. | do. | 2–4 | do. |
| FAL.127 | do. | do. | 2–7 | do. |
| FAL.128 | do. | do. | do. | do. |
| FAL.131 | 26.2.53 | Oatland Pt. (diving) | 1–2 | do. |
| FAL.132 | 27.2.53 | do. | 0–2 | do. |
| FAL.134 | do. | do. | do. | do. |
| FAL.136 | do. | do. | do. | do. |
| FAL.137 | 4.3.53 | Gordons Bay Quay (diving) | 0–4 | do. |
| FAL.144 | 9.3.53 | Oatland Pt. (diving) | 0–5 | do. |
| FAL.145 | do. | do. | do. | do. |
| FAL.149 | 12.3.53 | do. | 4·5–5·5 | S. R. |
| FAL.152 | do. | do. | do. | do. |
| FAL.155 | 21.4.53 | do. | 0–3 | R. |
| FAL.156 | do. | do. | do. | do. |
| FAL.159 | do. | do. | do. | do. |

False Bay Dredging (FAL)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| FAL.161 | 23.5.53 | Oatland Pt. (diving) | 0–2 | S. R. |
| FAL.162 | do. | do. | do. | do. |
| FAL.164 | do. | do. | do. | do. |
| FAL.166 | 10.6.53 | do. | 2–4 | do. |
| FAL.171 | do. | do. | 4–6·5 | do. |
| FAL.174 | do. | do. | do. | do. |
| FAL.178 | 9.8.53 | do. | 4 | do. |
| FAL.182 | 8.9.53 | do. | ?5 | do. |
| FAL.184 | 11.9.53 | 34.22.1S/18.35.2E | 73 | S. Sh. Gr. |
| FAL.185 | do. | do. | do. | do. |
| FAL.187 | 10.9.53 | 34.12.8S/18.36.5E | 46 | S. Sh. |
| FAL.204 | 9.9.53 | 34.07.1S/18.35.6E | (larva trap, night) | |
| FAL.205 | 10.9.53 | 34.17.6S/18.39.2E | 62 | S. Sh. |
| FAL.206 | do. | do. | do. | do. |
| FAL.207 | do. | 34.09.9S/18.42.4E | 36·5 | S. R. |
| FAL.209 | do. | 34.06.8S/18.40.3E | 29 | S. Sh. |
| FAL.211 | 9.9.53 | 34.07.1S/18.35.6E | 21·7 | S. Sh. R. |
| FAL.214 | 10.9.53 | 34.12.4S/18.43.5E | 42 | S. R. |
| FAL.216 | do. | do. | do. | do. |
| FAL.219 | 9.9.53 | 34.07S/18.32.5E | 18 | S. Sh. R. |
| FAL.223 | do. | 34.13.9S/18.31.6E | 40 | co. S. Sh. |
| FAL.225 | do. | do. | do. | do. |
| FAL.226 | do. | 34.10.5S/18.32.4E | 36 | S. |
| FAL.228 | do. | 34.20.3S/18.31.8E | 64 | do. |
| FAL.229 | do. | do. | do. | do. |
| FAL.231 | do. | 34.17.4S/18.31.4E | 49 | S. R. |
| FAL.233 | 10.9.53 | 34.15.3S/18.44.8E | 48 | S. Sh. Gr. R. |
| FAL.235 | do. | 34.18.2S/18.45.8E | 55 | R. |
| FAL.236 | do. | 34.21.1S/18.46.8E | 64 | do. |
| FAL.237 | do. | 34.22.7S/18.43.1E | 79 | gn. M. |
| FAL.238 | do. | 34.20.6S/18.39.4E | 82 | S. gn. M. |
| FAL.240 | do. | 34.23.7S/18.40.9E | 88 | gn. M. |
| FAL.241 | 11.9.53 | 34.18.5S/18.34.2E | 64 | S. M. Sh. |
| FAL.242 | do. | do. | do. | do. |
| FAL.243 | do. | 34.22.5S/18.37.3E | 80 | S. Sh. |
| FAL.245 | 21.4.53 | Oatland Pt. (diving) | 0–3 | R. |
| FAL.246 | 9.8.53 | do. | 4 | do. |
| FAL.247 | 9.9.53 | 34.07S/18.32.5E | 18 | S. Sh. R. |
| FAL.248 | do. | 34.07.1S/18.35.6E | 21·7 | do. |
| FAL.249 | do. | 34.07S/18.32.5E | 18 | do. |
| FAL.250 | 10.9.53 | 34.22.7S/18.43.1E | 79 | gn. M. |
| FAL.251 | do. | 34.23.7S/18.40E | 88 | do. |
| FAL.256 | 17.11.53 | Oatland Pt. (diving) | 4–5·5 | R. |
| FAL.257 | do. | do. | 2·5–5·5 | do. |
| FAL.258 | 21.11.53 | do. | 10·5 | S. Sh. |
| FAL.260 | do. | Noah's Ark (diving) | 14 | S. Sh. M. |
| FAL.262 | do. | do. | 11–14 | R. |
| FAL.266 | 27.1.53 | Windmill Beach (diving) | 4–5 | do. |
| FAL.269 | 18.9.54 | Roman Rock (diving) | 14–17 | do. |
| FAL.275 | 21.9.54 | do. | do. | do. |
| FAL.280 | 23.9.54 | do. | 12–14 | do. |
| FAL.283 | do. | do. | do. | S. Sh. |
| FAL.284 | do. | do. | do. | do. |
| FAL.302 | 8.10.02 | 34.23S/18.36E (S.A. Museum material) | 35 | R. |

False Bay Dredging (FAL)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| FAL.303 | 9.10.02 | 34.26S/18.37E (S.A. Museum material) | 73 | R. |
| FAL.304 | 15.10.1897 | 34.09.4S/18.49.5E (S.A. Museum material) | 18 | do. |
| FAL.306 | 11.9.53 | 34.22.1S/18.35.2E | 73 | S. Sh. Gr. |
| FAL.314 | 19.4.55 | 34.09.6S/18.27.4E | 26 | S. |
| FAL.324 | 6.10.1898 | 34.18S/18.?E (S.A. Museum material) | ? | ? |
| FAL.327 | 10.9.57 | Kalk Bay | 3–4 | R. |
| FAL.328 | 31.1.59 | 34.19S/18.34.6E | 40 | S. Sh. |
| FAL.334 | do. | 34.15S/18.36E | 51 | co. S. Sh. |
| FAL.338 | do. | 34.13S/18.35E | 44 | S. |
| FAL.341 | do. | 34.11S/18.35.5E | do. | f. br. S. |
| FAL.345 | do. | 34.11S/18.33.5E | 38 | f. S. |
| FAL.347 | do. | 34.10.8S/18.31E | 35 | do. |
| FAL.349 | do. | 34.08.7S/18.31.6E | 27 | w. S. |
| FAL.352 | 1.2.59 | 34.23.3S/18.40.3E | 88 | gn. M. |
| FAL.355 | 24.2.59 | 34.23.3S/18.39.4E | 97 | S.R. |
| FAL.357 | do. | 34.18.8S/18.39E | 73 | co. S. Sh. |
| FAL.359 | do. | 34.16.8S/18.40.9E | 62 | S. Sh. |
| FAL.365 | 25.2.59 | 34.09.2S/18.46.6E | 30 | R. |
| FAL.367 | do. | 34.11.1S/18.46.9E | 37 | S.R. |
| FAL.371 | do. | 34.12.6S/18.46.7E | 40 | R. |
| FAL.373 | do. | 34.15.1S/18.44.8E | 54 | S. Sh. |
| FAL.375 | do. | 34.16.8S/18.42.8E | 60 | gn. S. Sh. |
| FAL.376 | do. | 34.18.7S/18.37.2E | 72 | do. |
| FAL.378 | do. | do. | do. | do. |

Material From Commercial Trawlers (TRA)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| TRA. 20 | 5.5.46 | 33.48S/17.35E | 311 | gn. M. |
| TRA. 21 | 4.9.46 | 34.25S/18.10E | 301 | M. R. |
| TRA. 25 | 8.4.48 | 34.30S/20.54E | 66 | S. M. |
| TRA. 27 | 21.7.48 | 34.48S/20.20E | 67 | do. |
| TRA. 30 | 9.11.47 | 34.49S/20.21E | 86 | M. R. |
| TRA. 33 | 20.7.49 | 34.55S/21.10E | 90 | S. R. |
| TRA. 36 | 21.1.50 | 34.35S/20.50E | 73 | M. St. |
| TRA. 40 | –.7.50 | 34.30S/20.57E | do. | do. |
| TRA. 41 | 26.7.51 | 34.31S/20.50E | 66 | S. M. |
| TRA. 43 | ? | 29.49S/31.48E | 770 | M. |
| TRA. 46 | 24.9.52 | 31.25S/16.20E | 366 | gn. M. |
| TRA. 48 | do. | 31.15S/16.00E | 415 | M. S. |
| TRA. 52 | do. | 32.12S/16.38E | 394 | M. |
| TRA. 54 | 28.11.52 | 34.40S/21.35E | 73 | S. R. |
| TRA. 55 | do. | do. | do. | do. |
| TRA. 56 | do. | do. | do. | do. |
| TRA. 58 | 26.11.52 | 34.28S/21.45E | 70 | S. St. |
| TRA. 62 | 25.11.52 | 34.30S/21.15E | 62 | S. M. |
| TRA. 63 | 28.11.52 | 34.26S/21.50E | 64 | S. M. R. |
| TRA. 68 | 6.2.53 | 32.24S/18.07E | 69 | gn. M. |
| TRA. 69 | do. | (plankton) 32.45S/18.00E | 15 | S. R. |
| TRA. 70 | do. | 32.29S/18.02E | 27 | M. |
| TRA. 71 | 5.2.53 | 32.05S/18.14E | 66 | R. S. |

MATERIAL FROM COMMERCIAL TRAWLERS (TRA)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| TRA. 73 | 3.2.53 | 32.06S/16.37E | 311 | gn. M. |
| TRA. 74 | 5.2.53 | 32.05S/17.52E | 123 | do. |
| TRA. 75 | do. | do. | do. | do. |
| TRA. 77 | 6.2.53 | 32.41S/18.03E | 27 | S. M. |
| TRA. 80 | 4.2.53 | 32.23S/17.48E | 143 | gn. M. |
| TRA. 84 | 13.11.51 | 32.37S/18.17E | 6 | S. |
| TRA. 85 | 22.3.53 | 32.44S/18.02E | 18 | do. |
| TRA. 86 | 23.3.53 | 32.48S/17.58E | 9 | do. |
| TRA. 88 | do. | 32.44S/18.00E | 11 | do. |
| TRA. 89 | do. | 32.45S/18.03E | 9 | S. R. |
| TRA. 91 | 15.7.53 | 33.51S/25.50E | 46 | M. |
| TRA. 93 | –.1.54 | 35.03S/21.50E | 110 | S. R. |
| TRA. 94 | do. | do. | do. | do. |
| TRA.102 | –.3.56 | 34.25S/21.30E | 55 | S. R. Polyz. |
| TRA.104 | 6.8.56 | 34.31S/19.21E | 22 | S. |
| TRA.106 | do. | 34.33S/19.19E | 37 | do. |
| TRA.107 | 7.8.56 | 34.10S/18.48E (surface plankton) | 29 | ? |
| TRA.108 | 6.8.56 | 34.33S/19.19E | 37 | S. |
| TRA.110 | 8.9.56 | 34.19S/18.32E | 58 | S. Sh. R. |
| TRA.112 | do. | 34.19S/18.33E | 60 | S. R. |
| TRA.113 | do. | 34.19S/18.32E | 58 | do. |
| TRA.114 | do. | 34.19S/18.33E | 62 | do. |
| TRA.115 | 29.11.56 | 34.15S/18.43E | 54 | S. |
| TRA.116 | do. | 34.11S/18.39E | 44 | do. |
| TRA.121 | 25.1.57 | 34.12S/18.44E | 37 | S. R. |
| TRA.122 | do. | 34.13.5S/18.45E | 44 | S. |
| TRA.123 | do. | 34.12S/18.45E | 40 | S. R. |
| TRA.127 | 23.2.57 | 34.19S/18.30E | 51 | do. |
| TRA.132 | –.2.57 | 34.20S/18.30E | 55 | Phyllochaetopterus tubes S. Sh. R. |
| TRA.133 | do. | do. | do. | do. |
| TRA.135 | 23.2.57 | 34.19S/18.30E | 52 | do. |
| TRA.143 | 27.3.57 | 34.18S/18.31E | 51 | do. |
| TRA.151 | 6.3.58 | 34.51S/19.55E | 22 | R. |
| TRA.152 | do. | do. | do. | do. |

DREDGING BY S.A. FISHERIES RESEARCH VESSEL *Africana II* (AFR)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| AFR.689 | ? | 32.36.6S/16.44E | 391 | gn. M. |
| AFR.691 | 8.5.47 | 32.38S/16.52E | 347 | Cl. S. |
| AFR.707 | 26.5.47 | 31.40S/16.55E | 287 | d. gn. M. |
| AFR.718 | 19.6.47 | 32.09S/18.06E | 108 | do. |
| AFR.723–5–7 | 10.8.47 | 31.30S/17.00E | 366 | ? |
| AFR.728 | 15.8.47 | 31.14S/16.36E | 272 | Polyz. R. |
| AFR.730 | do. | 31.30S/16.03E | 459 | y. Cl. S. R. |
| AFR.736 | 17.8.47 | 30.42S/15.59E | 201 | co. gn. S. Sh. |
| AFR.761 | 10.9.47 | 30.13S/15.18E | 260 | Gr. S. R. |
| AFR.773 | 14.9.47 | 28.52S/14.50E | 194 | Cl. S. |
| AFR.775 | 15.9.47 | 29.16S/14.48E | 238 | Cl. S. R. |
| AFR.783 | 24.9.47 | 32.43S/17.31E | 222 | S. M. |
| AFR.789 | 28.9.47 | 33.05S/17.27E | 408 | bl. S. R. |

DREDGING BY S.A. FISHERIES RESEARCH VESSEL *Africana II* (AFR)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| AFR.790 | 28.9.47 | 33.12S/17.40E | 229 | gn. M. |
| AFR.791 | 4.10.47 | 32.41S/17.18E | 274 | R. bl. S. M. |
| AFR.801 | 7.10.47 | 32.34S/17.52E | 71 | R. d. gn. M. |
| AFR.830 | 19.11.47 | 32.12S/18.42E | 315 | ? R. |
| AFR.831 | do. | 35.15S/18.39E | 547 | Mn. Nod. |
| AFR.835 | 20.11.47 | ?35.09S/19.02E | 188 | M. |
| AFR.842 | 25.11.47 | 34.35S/19.18E | 31–38 | gr. S. |
| AFR.882 | 10.2.48 | 34.39S/18.42E | 168 | gn. M. |
| AFR.945 | 19.3.48 | 36.25S/21.08E | 177 | S. R. |
| AFR.950 | 20.3.48 | 36.44S/21.18E | 201 | bl. S. Sh. |
| AFR.957 | 22.3.48 | 35.13S/21.19E | 111 | co. S. St. |
| AFR.967 | 23.3.48 | 35.07S/20.49E | 91 | f. S. |
| AFR.994 | 19.4.48 | 34.35S/21.26E | 68 | co. S. Sh. |
| AFR.995 | do. | 34.29S/21.26E | 64 | gn. M. |
| AFR.1224 | 15.10.48 | 26.34S/15.04E | 55 | bl. M. |
| AFR.1335 | 13.11.48 | 25.51S/14.51E | 60 | gn. M. |
| AFR.1529 | 4.6.49 | 32.40S/17.43E | 150 | gn. M. R. |
| AFR.1532 | do. | 33.12S/17.58E | 77 | gn. M. |
| AFR.1535 | 9.7.49 | 29.09S/16.45E | 84 | M. |
| AFR.1544 | 23.7.49 | 29.17S/16.42E | 117 | gn. M. |
| AFR.1545 | do. | 29.09S/16.37E | 119 | gn. M. R. |
| AFR.1554 | 28.7.49 | 32.05S/18.17E | 35 | S. Sh. |
| AFR.1576 | 9.9.49 | 32.28S/18.06E | 66 | gn. M. R. |
| AFR.1578 | do. | 32.30S/17.49E | 158 | gn. M. S. R. |
| AFR.1579 | do. | 32.25S/17.42E | 117 | do. |
| AFR.1581 | 10.9.49 | 32.22S/17.59E | 122 | gn. M. R. |

MOSSEL BAY DREDGING (MB)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| MB. 4 | 12.1.56 | 34.09S/22.07.1E | 10 | S. Sh. R. |
| MB. 9 | do. | 34.04.2S/22.13.8E | 19 | R. |
| MB.13 | do. | do. | do. | do. |
| MB.16 | 13.1.56 | 34.11S/22.10.1E | 16 | S. R. |
| MB.20 | do. | 34.08.5S/22.07.2E | 13 | S. Sh. R. |
| MB.23 | do. | 34.08.8S/22.07.3E | 12·5 | R. |
| MB.27 | do. | 34.11.1S/22.09.9E | 19 | do. |
| MB.34 | 15.1.56 | 34.08.3S/22.09.4E | 31 | S. |
| MB.37 | 16.1.56 | 34.09.3S/22.10E | do. | do. |
| MB.38 | do. | 34.10.1S/22.07.8E | 8·5 | do. |
| MB.40 | do. | 34.10.1S/22.08E | 9 | R. |
| MB.41 | do. | do. | do. | do. |
| MB.42 | do. | 34.08.5S/22.08.8E | 25 | S. M. |
| MB.49 | 17.1.56 | 34.11.3S/22.10E | 10 | R. |
| MB.53 | do. | 34.11S/22.09.9E | 14 | R. S. |
| MB.56 | do. | 34.10.7S/22.09.6E | 9 | R. |
| MB.57 | do. | do. | do. | do. |
| MB.58 | 18.1.56 | 34.04.3S/22.13.5E | 12·5 | do. |
| MB.59 | do. | 34.04.1S/22.13.9E | 11·5 | do. |
| MB.62 | do. | 34.04.3S/22.14.2E | 18·5 | co. S. Sh. R. |
| MB.66 | do. | 34.04.8S/22.13.1E | 26 | do. |
| MB.67 | do. | do. | do. | do. |
| MB.68 | 19.1.56 | 34.09.1S/22.07.3E | 13 | S. Sh. R. |

MOSSEL BAY DREDGING (MB)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| MB.69 | 19.1.56 | 34.08.6S/22.07.3E | 13·5 | S. R. |
| MB.74 | do. | 34.09.1S/22.07.2E | 12 | S. Sh. R. |
| MB.75 | do. | 34.08.7S/22.07.4E | 15·5 | S. |
| MB.77 | 20.1.56 | 34.11.3S/22.06.3E | 24 | S. R. |
| MB.78 | do. | do. | do. | do. |
| MB.79 | do. | 34.05S/22.11.8E | 19 | M. |
| MB.81 | do. | 34.06.2S/22.10.9E | 27·5 | do. |
| MB.85 | 21.1.56 | 34.11.4S/22.10.1E | 29 | R. |
| MB.86 | 17.1.56 | 34.11.3S/22.10E | 10 | do. |
| MB.87 | do. | 34.11S/22.09.9E | 14 | R. S. |
| MB.88 | 18.1.56 | 34.04.8S/22.13.1E | 26 | co. S. Sh. R. |

ALGOA BAY DREDGING (LIZ)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| LIZ. 1 | 5.4.54 | 33.55.7S/25.37.2E | 9·5 | M. |
| LIZ. 2 | do. | do. | do. | do. |
| LIZ. 3 | 5.4.54 | 33.56.1S/25.40E | 17·5 | S. |
| LIZ. 6 | 6.4.54 | 33.58.1S/25.38.9E | 9 | R. St. |
| LIZ. 9 | do. | do. | do. | do. |
| LIZ.13 | do. | 33.58.2S/25.38.8E | 7·5 | S. |
| LIZ. 18 | 7.4.54 | 33.58.4S/25.40.5E | 14 | St. |
| LIZ.19 | do. | 33.58.5S/25.42E | 27 | S. Sh. |
| LIZ.23 | 8.4.54 | 33.58S/25.43E | 38·5 | M. Cl. |
| LIZ.24 | 11.4.54 | 34.00.4S/25.44.5E | 39 | co. S. Sh. |
| LIZ.25 | do. | do. | do. | do. |
| LIZ.27 | do. | 34.00.8S/25.42.4E | 6 | R. |
| LIZ.29 | do. | do. | do. | do. |

SOUTH COAST DREDGING (SCD)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| SCD. 1 | 15.4.58 | 35.27S/20.10E | 150 | M. |
| SCD. 3 | 18.4.58 | 34.20S/24.40E | 102 | R. |
| SCD. 4 | do. | do. | do. | do. |
| SCD. 9 | 19.4.58 | 34.15S/25.05E | 11 | Sh. R. |
| SCD. 18 | 20.4.58 | 32.52S/28.12.5E | 78 | Cl. M. |
| SCD. 20 | 26.5.58 | 34.07.3S/23.23.8E | 46 | R. |
| SCD. 22 | do. | ?34.46S/23.27E | ?110 | ?R. |
| SCD. 25 | 24.5.58 | 34.02.5S/25.46.5E | 75 | S. M. |
| SCD. 26 | 23.5.58 | 33.47S/26.04E | 47 | M. Sh. |
| SCD. 32 | 22.5.58 | 33.38.6S/26.54.7E | 55 | R. |
| SCD. 33 | 21.5.58 | 33.03S/27.56.2E | 57 | S. Sh. |
| SCD. 40 | 19.5.58 | 32.15.2S/28.57.7E | 47 | R. |
| SCD. 50 | do. | 31.38.8S/29.34.4E | do. | do. |
| SCD. 54 | 20.8.58 | 34.01S/25.45.5E | 46 | do. |
| SCD. 58 | 19.8.58 | 33.37S/26.56.6E | do. | S.R. |
| SCD. 61 | 16.8.58 | 33.02S/27.56.2E | do. | do. |
| SCD. 63 | 14.8.58 | 31.57.2S/29.36E | 36 | S. M. |
| SCD. 69 | 5.7.59 | 33.31S/27.14.5E | 67 | ?S. |
| SCD. 72 | 15.7.59 | 31.41.7S/29.33.5E | 90 | glutinous br. M. and grass. |

South Coast Dredging (SCD)

| *No.* | *Date* | *Position* | *Depth* (Metres) | *Bottom* |
|---|---|---|---|---|
| SCD. 74 | 16.7.59 | 32.33S/28.38E | 55 | S. M. |
| SCD. 78 | do. | 32.37S/28.31E | 49 | br. S. |
| SCD. 80 | do. | 32.43S/28.28E | 58 | St. Sh. |
| SCD. 82 | 17.7.59 | 27.54S/33.03E | 51 | br. S. Sh. |
| SCD. 89 | do. | 33.03S/27.55E | 27 | R. |
| SCD. 94, 96 | 20.7.59 | 34.21S/25.41E | 110 | Sh. |
| SCD. 99 | 21.7.59 | 34.33S/24.01E | 130 | R. |
| SCD.100 | do. | do. | do. | do. |
| SCD.103 | 22.7.59 | 35.07S/22.15E | 120 | m. S. |
| SCD.105 | 23.7.59 | 34.33S/21.28E | 67 | co. S. br. Sh. |
| SCD.106 | do. | 34.35S/21.10E | 67 | S. M. |
| SCD.109 | do. | 34.35S/21.11E | 75 | co. S. Sh. St. |

## Family *APHRODITIDAE*

### Subfamily Hermioninae

### *Aphrodita alta* Kinberg 1855

*Aphrodite alta.* Kinberg 1857, p. 2, pl. 1, fig. 1 *a–g.* Monro 1930, p. 36, fig. 5 *a–l.*
*Aphrodita A* near *alta* McIntosh 1925, p. 18.

*Records:* AFR.728(1), 835(1).

*Notes:* In this species the dorsal setae do not project through the felt, the eyes lack pigment, the ceratophore of the median antenna is short and stout but bears a very fine ceratostyle which is three-quarters the length of the prostomium. The ventral setae have curved, bearded tips.

Monro (1930) states that the median antenna is short and stout but this does not agree with Kinberg's pl. 1, fig. 1*b*, and it is probable that Monro was describing the ceratophore from which the ceratostyle had fallen. Again Monro's fig. 5*a* shows the stout dorsal setae as quite smooth. In mine they are covered with minute hairs.

McIntosh's specimens in the British Museum have been checked as identical with my own.

### Subfamily Polynoinae

### *Harmothoe aequiseta* (Kinberg) 1855

?*Lagisca extenuata* Ehlers 1913, p. 446.
*Harmothoe aequiseta.* Augener 1918, p. 137. Day 1953, p. 400.
*Harmothoe crosetensis* (non McIntosh) Monro 1930, p. 57 (partim).

*Records:* SB.118(1); TRA.71(1); FAL.16(1), 30(1), 44(5), 51(*p*), 56(4), 69(*p*), 80(*p*), 223(*p*); MB. 20(1), 57(1), 77(2); KNY.6(1), 11(1), 21(2).

*Notes:* The specimens reported by Monro (1930) from Simonstown as as *H. crosetensis* are definitely *H. aequiseta.* McIntosh described *H. crosetensis* as having fringed elytra but an examination of his type in the British Museum

shows that the surface of the elytron is densely covered with soft papillae right to the edge but the margins are not fringed. Monro's specimen of *H. crosetensis* from the South Shetland Islands agrees with McIntosh's type. The specimen recorded by Ehlers (1913) as *Lagisca extenuata* was a juvenile and should probably be referred to *H. aequiseta*.

### *Harmothoe africana* Augener 1918

*Harmothoe africana* Augener 1918, p. 139, pl. 2, figs. 15–19, text fig. 6.

*Records:* FB.316(1).

*Notes:* Both *H. africana* and *H. goreënsis* (recorded below) are very closely allied to *H. aequiseta* if they are not mere varieties of the latter. In *H. aequiseta* the larger tubercles on the elytra look like straight dark thorns. In *H. africana* the larger tubercles are almost cylindrical and end in 2–4 points but there is considerable variation among the smaller ones.

### *Harmothoe goreënsis* Augener 1918

*Harmothoe goreënsis* Augener 1918, p. 142, pl. 2, figs. 4–6; pl. 3, fig. 42, text-fig. 7.

*Records:* LAM.8(1), 22(3), 31(2), 44(1), 47(1), 57(1); SB.180(1), 183(3), 184(3), 189(1), 207(2); T.B.301(1), 306(1); WCD.8(1), 13(1); FAL.8(1), 58(*p*), 113(1), 134(5), 144(5), 149(2), 156(6), 216(1), 238(1), 280(4), 338(1), 341(1), 359(1), 375(1); MB.9(1), 13(2), 16(1), 27(3), 41(7), 49(12), 53(12), 56(2), 67(10), 69(1), 74(2); 77(6), 85(2); LIZ.2(6), 9(1), 18(4), 35(4), SCD. 40(1), 54(5), 58(5), 74(1).

*Notes:* This is a small species first recorded from shallow waters off Angola and Senegal. This is the first record from South Africa. It differs from *H. aequiseta* in having short, blunt, cylindrical or crown-shaped tubercles on the elytra instead of long sharp ones.

### *Harmothoe fraser-thomsoni* McIntosh 1897

*Harmothoe fraser-thomsoni.* Fauvel 1923, p. 68, fig. 25 *a–e.* Day 1953, p. 400.

*Records:* SB.129(1), 132(1); LB.456(2); LIZ.6(1); SCD.58(1).

*Notes:* As stated earlier the South African material is a little different from typical European forms. The elytra have more numerous and crowded tumid papillae and the notosetae have long naked tips instead of short tips.

### *Harmothoe gilchristi* n.sp.

(Fig. 1 *a–f*)

*Records:* AFR.835(2); FAL.355(1); SCD.22(1).

*Description:* The holotype is the single specimen from SCD.22. It is complete and measures 16 mm. by 3·5 mm. with 38 segments. The body is pale but there are brown markings on the elytra, antennae and dorsal cirri.

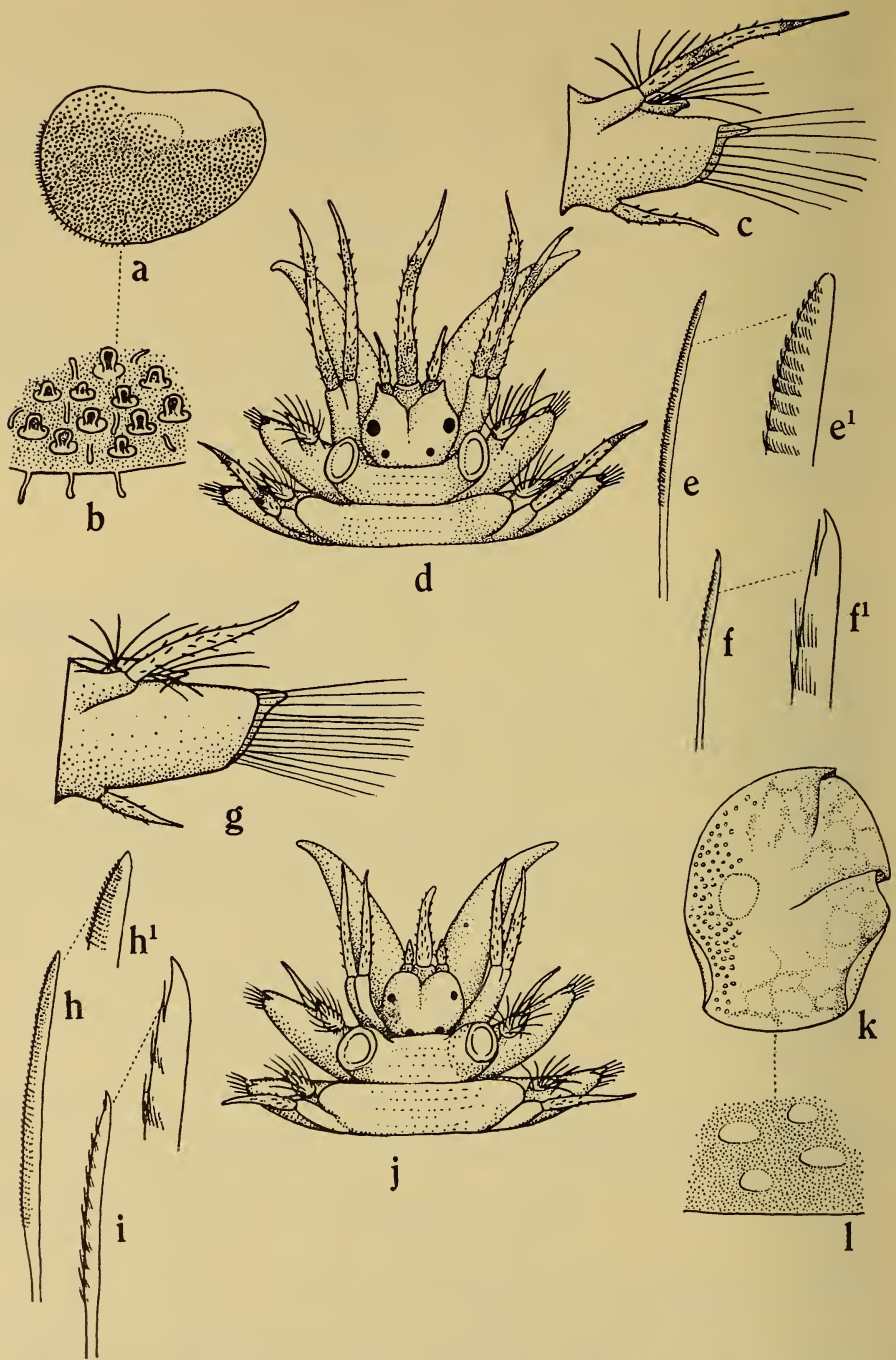


FIG. 1. *Harmothoe gilchristi: a* elytron; *b* details of tubercles and papillae; *c* posterior view of 8th parapodium; *d* head; *e*, $e^1$ notoseta; *f*, $f^1$ neuroseta.

*Harmothoe agulhana: g* posterior view of 8th parapodium; *h*, $h^1$ notoseta; *i*, $i^1$ neuroseta; *j* head; *k* elytron; *l* details of 'tubercles'.

The prostomium (fig. 1*d*) is almost square, slightly broader than long with very sharp prostomial peaks. The anterior pair of eyes are large and placed well back on the sides of the prostomium. The three antennae arise from short swollen cirrophores and all are brown, densely clad with long papillae and tapering. The median antenna of the holotype is missing but a specimen from AFR.835 shows that it is twice the length of the prostomium. The laterals on account of the very large prostomial peaks are markedly ventral in origin and each is well tapered and three-quarters the prostomial length.

The body is slightly tapered posteriorly and the last 6 segments lack elytra. The dorsal cirri are tapered, densely papillose and exceed the length of the neuropodia but not the neurosetae. Each has two dark bands of pigment. The elytra (fig. 1*a*) are large, circular, mottled with purplish-brown and cover the back except for the last few segments. Each has a very small fringe of unicellular papillae on the external margin and the surface (fig. 1*b*) is densely covered with short cylindrical or bollard-like tubercles plus a few elongate papillae. There are no large posterior vesicles.

The notopodium (fig. 1*c*) is well developed with a radiating tuft of numerous notosetae (fig. 1*e*). Each is stout and strongly serrated to the blunt grooved tip. The neuropodium is well developed with a pointed presetal lobe containing the aciculum and a truncate postsetal lip. The neurosetae (fig. 1*f*) are bidentate and have fairly long blades with about 15 rows of well-developed spinules and long naked tips (fig. 1*f*). The terminal tooth is broad with a curved point and the secondary tooth which lies in line with the shaft is exceedingly long and slender. Its length is almost twice the width of the shaft at the origin of the tooth and three-quarters the length of the terminal tooth.

*H. gilchristi* comes fairly close to *H. goreënsis* Augener but the prostomial peaks are better developed, the tubercles on the elytra are larger and most of them are swollen distally instead of being sculptured. Again, the notosetae have shorter, grooved tips which are rounded not pointed. The secondary tooth of the neuroseta is also distinctly longer. Type locality: Agulhas bank.

*Harmothoe agulhana* n.sp.

(Fig. 1 *g–l*)

*Records:* ?AFR.7070(1); FAL.365(1); MB.67(1); LIZ.25(1).

*Description:* The holotype is the single complete specimen LIZ.25 dredged in Algoa Bay. It is 12 mm. long by 2 mm. excluding setae and has 36 setigers. The body is narrowly oblong, hardly tapered posteriorly and is pale in alcohol with a faint network of brown on the exposed parts of the elytra.

The prostomium (fig. 1*j*) is about as broad as long with poorly marked frontal peaks. The eyes are rather small and the anterior pair is laterally situated almost half-way back. The tapered median antenna is as long as the prostomium but the laterals are very short and stumpy, barely a quarter of

the prostomial length. All antennae and cirri are sparsely beset with small papillae.

The dorsal cirri are tapered and on all except the last few segments they are shorter than the neurosetae. The ventral cirri are very small and distinctly tapered. The 15 pairs of elytra cover the body except for the last two segments. Individual elytra (fig. 1*k*) are large and oval and so thin that the edges tend to crumple. The colour is generally pale but there is a faint speckling or network of brown pigment over most of the surface. There is a patch of small rounded chitinous tubercles on the antero-medial margin, and a scattering of similar tubercles (fig. 1*l*) over the surface which do not have chitin-thickened walls and for this reason are not very obvious.

The notopodium (fig. 1*g*) is normally developed and the notosetae (fig. 1*h*) are fairly numerous but rather short and stout and strongly serrated to their blunt tips (fig. $1h^1$). The neuropodium is a truncate cone with a small presetal projection covering the end of the aciculum. The neurosetae (fig. 1*i*) have blades of normal length with about 10 rows of spinules. Apart from 2–3 superior neurosetae which are unidentate, the tips (fig. $1i^1$) are bidentate with a strong hooked terminal tooth and a fine secondary tooth.

A fragment of what may be the same species was obtained from station AFR.707. While generally similar, there are signs of prostomial peaks, the notosetae are very stout and have grooved tips and the neurosetae have more rows of spinules, so that both types of setae are very similar to those of *H. gilchristi*. But the short lateral antennae and the elytra are very like those of *H. agulhana* with only tiny hemispherical tubercles and entire margins.

This species appears to be related to *H. ljungmani*. The notosetae are similar and the elytra are not very different though the tubercles are not so well developed. The neurosetae, however, are quite distinct.

### *Harmothoe corralophila* n. sp.

(Fig. 2 *a–f*)

*Records:* AFR.950(1); WCD.3(1), 13(3); FAL.378(1); SCD.100(1), 103(1).

*Description:* The type was selected from WCD.13. It is 15 mm. long with 37 segments. It is quite white in alcohol with rather glassy setae. The prostomium is bilobed and broader than long with obvious frontal peaks and rather large eyes. The anterior pair are half-way back and much wider apart than the posterior pair. The median antenna is twice as long as the prostomium and is mounted on a stout ceratophore from which an obvious ridge extends back along the dorsal surface of the prostomium for half of its length. The lateral antennae are tapered, markedly ventral in origin and equal to the prostomial length. All antennae and cirri are smooth. The palps are fairly large.

The elytra cover the whole length of the body. All of them are white and have entire margins without a sign of a fringe but the surface of the first few

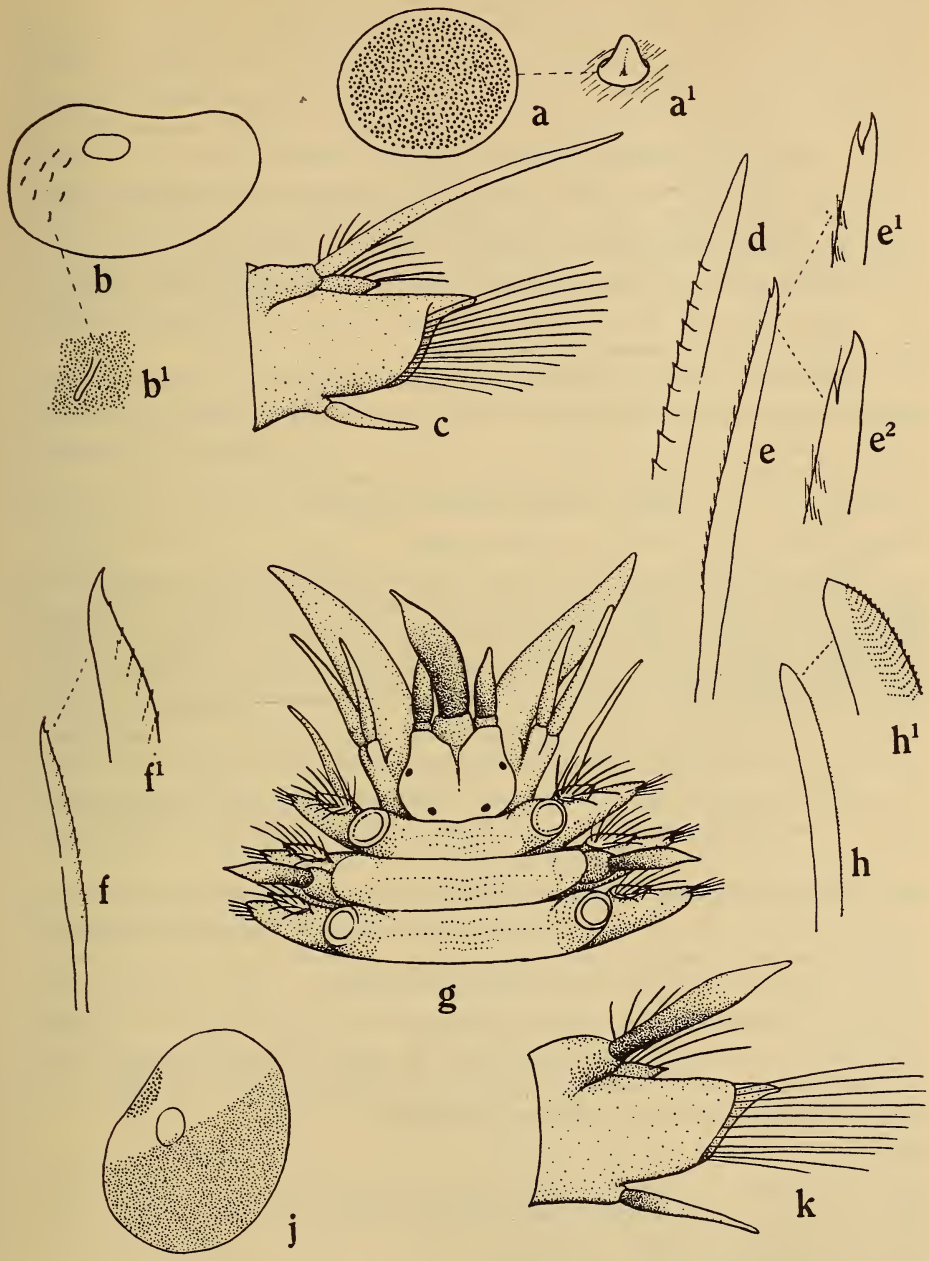


FIG. 2. *Harmothoe corralophila: a* first elytron; $a^1$ chitinous tubercle; *b* posterior elytron; $b^1$ soft papilla; *c* posterior view of parapodium; *d* notoseta; *e* neuroseta; $e^1$ tip of superior neuroseta; $e^2$ tip of middle neuroseta.

*Malmgrenia purpurea: f* neuroseta; $f^1$ tip of neuroseta; *g* head; *h* notoseta; $h^1$ tip of notoseta; *j* elytron; *k* posterior view of parapodium.

differs from more posterior pairs which at first sight appear to be quite smooth. The first pair (fig. 2*a*) are smaller than the rest, circular in outline and most of the surface is thickly chitinized and densely beset with numerous highly chitinized conical tubercles (fig. 2$a^1$) plus a few indistinct soft cylindrical papillae. On some specimens there is only a narrow marginal belt around the elytron which is not thickly chitinized and free from tubercles but in others there is a relatively broad naked margin. The second pair of elytra has a more restricted area of thick chitin and tubercles and a larger area which is naked apart from the soft digitiform papillae. In the third and fourth pairs there are even smaller chitinized and tuberculate patches. All succeeding elytra (fig. 2*b*) are thin, entirely devoid of tubercles and have only a few indistinct papillae (fig. 2$b^1$) on the otherwise smooth surface.

The dorsal cirri are smooth and tapered. The first few barely reach the ends of the neurosetae but further back they are longer. The notopodia are rather small and the notosetae (fig. 2*d*) are not very numerous but each is stout and well developed with widely spaced rows of large serrations or cusps preceding the long naked tip. Most of the notosetae are sharply pointed but some of the longer ones have grooved tips.

The neuropodium (fig. 2*c*) has a pointed presetal lip and a fan of long, clear, rather slender setae (fig. 2*e*). The spinules are poorly marked. Although there are actually 20 rows of spinules which is more than usual, the inferior neurosetae may at first appear to be smooth because the spinules lie so close along the blade. The terminal tooth is always well developed but the secondary tooth is very variable. In superior neurosetae (fig. 2$e^1$) it is shorter but almost as broad as the terminal one so that the tip of the blade appears to be bifid. In middle neurosetae (fig. 2$e^2$) the base of the secondary tooth is stout but the point is exceedingly fine and often bent or broken leaving a stout stump. No truly unidentate setae have been seen.

The first specimen obtained (AFR.950) has lost the anterior elytra and was provisionally identified as *Harmothoe joubini* Fauvel 1914 which it resembles in many respects apart from the anterior elytra and the tips of the neurosetae. Later several stylasterid corals (*Allopora bithalamus*) were obtained from SCD.100 with galls in the shape of open tunnels on their sides. *H. corralophila* was found in these galls and is obviously the cause of their formation. Since both ends of the tunnel are open it is probable that the worm can move in or out at will and uses the tunnel for protection.

### *Harmothoe lunulata* (Delle Chiaje) 1841

*Harmothoe lunulata.* Fauvel 1923, p. 70, fig. 26.

*Records:* FAL.285(1).

*Notes:* This is a new record for South Africa.

### *Harmothoe saldanha* Day 1953

*Harmothoe saldanha* Day 1953, p. 401, fig. 1 *a–d.*

*Records:* SB.202(1); SCD.32(1).

### *Harmothoe* (*Lagisca*) *waahli* (Kinberg) 1855

*Harmothoe waahli* Monro 1933, p. 489, figs. 1–3.

*Records:* SB.121(4), 127(2); LB.155(2), 161(4); WCD.19(1); FB.302(1), 311(1), 319(1); FAL.43(2), 51(1), 58(1), 80(1), 235(1), 249(1), 269(1), 367(1); MB.16(1); LIZ.6(3).

*Notes:* Several authors have recorded this species under the generic name *Harmothoe* but it should be noted that the last 12 segments are narrowed and not covered by elytra. However I do not feel that this character merits full generic distinction.

### *Scalisetosus pellucidus* (Ehlers) 1864

*Scalisetosus pellucidus.* Fauvel 1923, p. 74, fig. 27 *a–f.*

*Records:* LAM.1(1), 8(3), 25(1), 31(2), 63(1); SB.118(1), 119(1), 179(1); LB.161(1); TRA.71(1), 102(1); FB.302(1); FAL.8(*p*), 30(1), 95(*p*), 113(*p*), 122(1), 134(4), 166(1), 184(1), 275(1), 327(1), 338(1), 367(2); MB.40(1), 74(1), 86(1); KNY.6(1), 30(1); LIZ.9(1), 29(1), 35(1); SCD.9(2), 22(2), 100(1).

### *Antinoe lactea* Day 1953

*Antinoe lactea* Day 1953, p. 403, fig. 2 *a–g.*

*Records:* LB.299(3), 300(1), 364(5).

*Notes:* It is surprising that this species has never been recorded outside Langebaan Lagoon.

### *Malmgrenia purpurea* n. sp.

(Fig. 2 *f–k*)

*Records:* WCD.5(1); FAL.229(1), 359(1), 375(1).

*Diagnosis:* A purple species with very stout antennae and cirri.

*Description:* The type material consists of two complete but broken specimens dredged with *Spatangus capensis* from stations FAL.359 and FAL.375. The larger specimen measures 17 mm. and has 38 segments; the smaller specimen measures 10 mm. and has 37 segments. Both are purple in alcohol but many of the dorsal cirri and elytra are missing and some of the antennae as well. For this reason the description is based on both specimens.

The prostomium (fig. 2*g*) is rectangular and longer than broad with rather small eyes which are not easily distinguished against the purple background.

The anterior pair are set half-way back on the sides of the prostomium. At first sight it was thought that the insertion of the antennae was harmothoid and then it was noticed that prostomial peaks are absent and the lateral antennae are not ventral but subterminal in origin. When the worm was turned over it was further noted that there is a well developed facial tubercle and that the bases of the cirrophores which bear the lateral antennae are fused to the lower side of the prostomium but their distal ends incline upward so that the antennae appear to be almost terminal. This type of insertion is best termed subterminal but it should be noted that it is quite distinct from the so-called subterminal insertion of *Halosydna* where the lateral antennae arise from a lower level than the median antenna only because the latter is actually dorsal in origin. The median antenna here is terminal and it is a large dark almost club-shaped organ about as long as the prostomium. Its surface is quite smooth. The lateral antennae are similar in shape but only half as long. The palps are rather short and the tentacular cirri are rather stout. The tentacular segment bears a single seta.

There are 15 pairs of elytra which cover the dorsum. Each is broadly oval in shape (fig. 2*j*) and quite smooth except for a small patch of minute rounded tubercles on the anterior margin. There is no trace of a marginal fringe. The anterior half of each elytron is colourless where it is overlapped by the preceding one but the exposed posterior half is dark purple with clear cells here and there.

The dorsal cirri (fig. 2*k*) are similar to the antennae, being dark in colour, quite smooth and swollen distally before the tip. The notopodium bears about a dozen stout notosetae and the neropodium which has a pointed or triangular presetal lip and a shorter, more rounded post-setal lip bears some 20–30 rather short neurosetae. The ventral cirrus is smooth, evenly tapered and extends almost to the end of the neuropodium.

The notosetae (fig. 2*h*) are stout, very lightly serrated and end in abruptly pointed tips. Under high power the tiny close-set serrations produce a herring-bone pattern on the surface of the seta but individual serrations cannot be seen. The neurosetae (fig. 2*f*) have more slender shafts than the notosetae but the blades are of normal length and bear about 25 rows of very fine, transparent spinules. The tips (fig. 2*f*[1]) are short, the terminal tooth is sharp and well hooked but the secondary tooth is minute or even absent on some of the inferior neurosetae.

The pygidium bears a pair of dark sausage-like anal cirri.

Reference to Fauvel (1923) and Monro (1936) shows that the distinction between the genus *Malmgrenia* McIntosh 1876 and *Eulagisca* McIntosh 1885 is not clear. *Malmgrenia* as defined by Fauvel (1923) is generally similar to *Harmothoe* but differs in having the lateral antennae subterminal in origin, the notosetae very stout and faintly spinulose and the neurosetae either unidentate or with a minute secondary tooth. Fauvel in his definition states that the insertion of the antennae is similar to that of *Halosydna* but his figure of the head of *Malmgrenia castanea* shows that it is not similar to that of *Halosydna*

but the same as *M. purpurea* described above. *Eulagisca* was not defined by McIntosh (1885) but has been defined by Monro (1936) in terms which suggest that it is synonymous with *Malmgrenia*. However the figures of *Eulagisca corrientis* (the type species of *Eulagisca*) given by Monro (1930) show that the insertion of the antennae is similar to that of *Halosydna*, the notosetae strongly serrated and the neurosetae unidentate.

The present species *M. purpurea* may be distinguished from *M. castanea* by the position of the eyes, the possession of shorter and much stouter antennae and dorsal cirri and by the fact that the neurosetae are mainly bidentate. *M. castanea* is known to be commensal of the echinoid *Spatangus purpureus; M. purpurea* is probably a commensal of *Spatangus capensis*.

### *Lepidonotus durbanensis* Day 1934

*Lepidonotus durbanensis* Day 1934, p. 18, fig. 1 *a–c*. Day 1951, p. 9.

*Records:* MB.86(1).

*Notes:* Only a single small specimen was obtained but it is quite distinct from the common *L. clava var. semitecta*. This is the most southerly record of this Natal form.

### *Lepidonotus clava* (Mont.) var. *semitecta* Stimpson. 1855

*Lepidonotus clava* var. *semitecta*. Willey 1904, p. 256, pl. 13, fig. 4. Day 1953, p. 399.

*Records:* SB.207(1); LB.161(3); TB.302(1), 305(2), 309(1), 313(1), 317(1); TRA.122(1); WCD.8(3); False Bay—50 records on rock 0–73 metres, common; MB.9(2), 16(1), 23(1), 40(12), 49(12), 53(15), 56(2), 59(1), 62(6), 67(1), 85(3); KNY.21(1), 22(1); LIZ.2(2), 6(4), 18(*c*), 27(3); SCD.89(1).

### *Polynoe erythrotaenia* (Schmarda) 1861

*Hemilepidia erythrotaenia* Willey 1904, p. 258, p. 13, figs. 6, 26.

*Records:* SB.179(1); TB.324(1).

### *Polynoe scolopendrina* Savigny 1820

*Polynoe scolopendrina*. Fauvel 1923, p. 80, fig. 30. Day, 1953, p. 406.

*Records:* LAM.8(1), 13(1), 25(1), 31(4), 59(common), 63(1); LB.299(2); TRA.135(1); FAL.110(1), 122(*p*), 219(1), 345(1); MB.41(1), 53(1), 56(1), 67(1); LIZ.2(3), 6(1), 29(2); SCD.58(1).

### ?*Polynoe capensis* McIntosh 1885

*Polynoe capensis* McIntosh 1885, p. 114, pl. 4, fig. 4; pl. 15, fig. 1; pl. 19, fig. 4; pl. 9*a*, figs. 4 and 5.

*Notes on the type material.* No new specimens have come to hand, but the type specimens dredged from 98 fathoms off the Cape of Good Hope and

now in the British Museum (register number 1885 12.1.94) were re-examined. The type material consists of blackened fragments of two specimens and several loose elytra. The median antenna is missing and the lateral antennae which are terminal in origin, are two-thirds the length of the prostomium. The anterior pair of eyes are slightly larger than the posterior pair and are dorsal in position. The total number of elytra originally present cannot now be determined but one posterior fragment shows 8 posterior segments without elytra scars. The loose elytra are oval, one half brown and one half white. The pale half has a triangular patch of small chitinous tubercles. The parapodia have a fair number of notosetae, each of which is weakly spinulose with an abruptly tapered tip. The neurosetae are also weakly spinulose and the tip at first appears to be unidentate, but careful examinations show a small, blunt secondary tooth.

Although the colouration of the elytra is reminiscent of *Polynoe erythrotaenia*, the other characters differ and the terminal insertion of the lateral antennae shows that this species should be removed from the genus *Polynoe*. Fresh material is required before its generic position and exact characters can be determined.

### *Lepidasthenia elegans* (Grube )1840

*Lepidasthenia affinis* Horst 1917, p. 85, pl. 19, fig. 8.
*Lepidasthenia elegans*. Fauvel 1923, p. 88, fig. 23 *a–g*.

*Records:* TRA.133(1); SCD.58(1).

*Notes:* These two specimens from dredgings off the Cape and another that I have seen from the shore of Inhaca Island agree very well with Fauvel's description apart from the minor points noted below. They have rather fewer elytra (23 as against 30–36 for the Mediterranean specimens) and individual elytra are rather larger though they leave the central third of the back bare except at the anterior end. Each elytron is speckled with dark pigment except for a white spot which marks the area of attachment. The prostomium, eyes, antennae and dorsal cirri are identical. As in the Mediterranean form the notopodia usually lack setae but careful search revealed that a few feet have a single minute notoseta with poorly marked serrations. The neurosetae are variable both along the length of the body and within a single fascicle. The first few feet have 2–3 slender superior setae with long, coarsely spinulose blades. The remaining setae of an anterior foot are stouter with short spinulose blades and strongly bidentate ends though the secondary tooth is markedly smaller than the terminal one. Further back along the body the slender superior setae are lacking and a giant brown superior seta appears. Moreover the secondary tooth is reduced and may be completely lacking so that the giant seta becomes unidentate, with only a few rows of rather worn spinules.

*L. elegans* has already been recorded from Zanzibar by Potts (1910) but he makes no mention of the slender superior setae of anterior feet. Horst's description of *L. affinis* from Lombok in the East Indies leaves no doubt that

his specimen is conspecific with mine though it had 40 pairs of elytra. He separates *L. affinis* from *L. elegans* as described by Potts on the relative size of the elytra and minor differences in the disposition of the setae. I feel, however, that Potts's description was too brief and that further specimens have shown these characters are too variable to warrant specific distinction.

*Lepidasthenia brunnea* n. sp.

(Fig. 3 *a–d*)

*Records:* FAL.352(2).

*Description:* The type material consists of two broken specimens, the largest anterior fragment measuring 40 mm. by 5 mm. (including parapodia) and having 48 segments. The body is light brown in alcohol with colourless parapodia and the large deciduous elytra are half brown and half transparent.

The prostomium (fig. 3*a*) is bilobed and almost twice as broad as long. The anterior pairs of eyes are larger and wider apart than the posterior pair. The three long smooth antennae are very alike. All arise from short cerato-phores on the anterior margin of the prostomium and taper slowly towards the final slender tip. The median, which is a little longer than the laterals is 5–6 times the length of the prostomium and roughly equal in length to the width of the body. The tentacular cirri are both about as long as the lateral antennae and each arises from a stout base with a projecting aciculum. The palps are stout and equal the length of the tentacles.

The body is long and flattened, brown dorsally and pale ventrally. The elytra are large and overlap to cover the back They are inserted as usual on segments, 2, 4, 5, 7, 9 . . . and alternating segments anteriorly but on every third further back and, since the body is broken, it is not possible to say how many there were, but as the anterior fragment has 21 elytra scars there must have been many more on the complete worm.

Each elytron is oval in shape, very thin and quite smooth. The anterior half which lies under the preceding elytron is colourless but the exposed posterior half is pale brown. The dorsal cirri arise from short broad cirrophores and extend outwards well past the tips of the setae. Each one is quite smooth and colourless, rounded in section and tapers evenly to a slender tip. The first few are considerably longer than those from the middle of the body.

The notopodia (fig. 3*b*) are reduced to tiny pointed lobes lying on the dorsal surfaces of the neuropodia. Each contains an aciculum but there are no notosetae. The neuropodia are stout fingerlike organs projecting from the sides of the body and posterior ones are longer than the body is broad. Each has a long pointed presetal lip, a rather shorter postsetal lip and between these two issues a fan of long setae. The ventral cirrus is short and between it and the body the ventral surface of the parapodium bears a single row of about 8 elongate papillae.

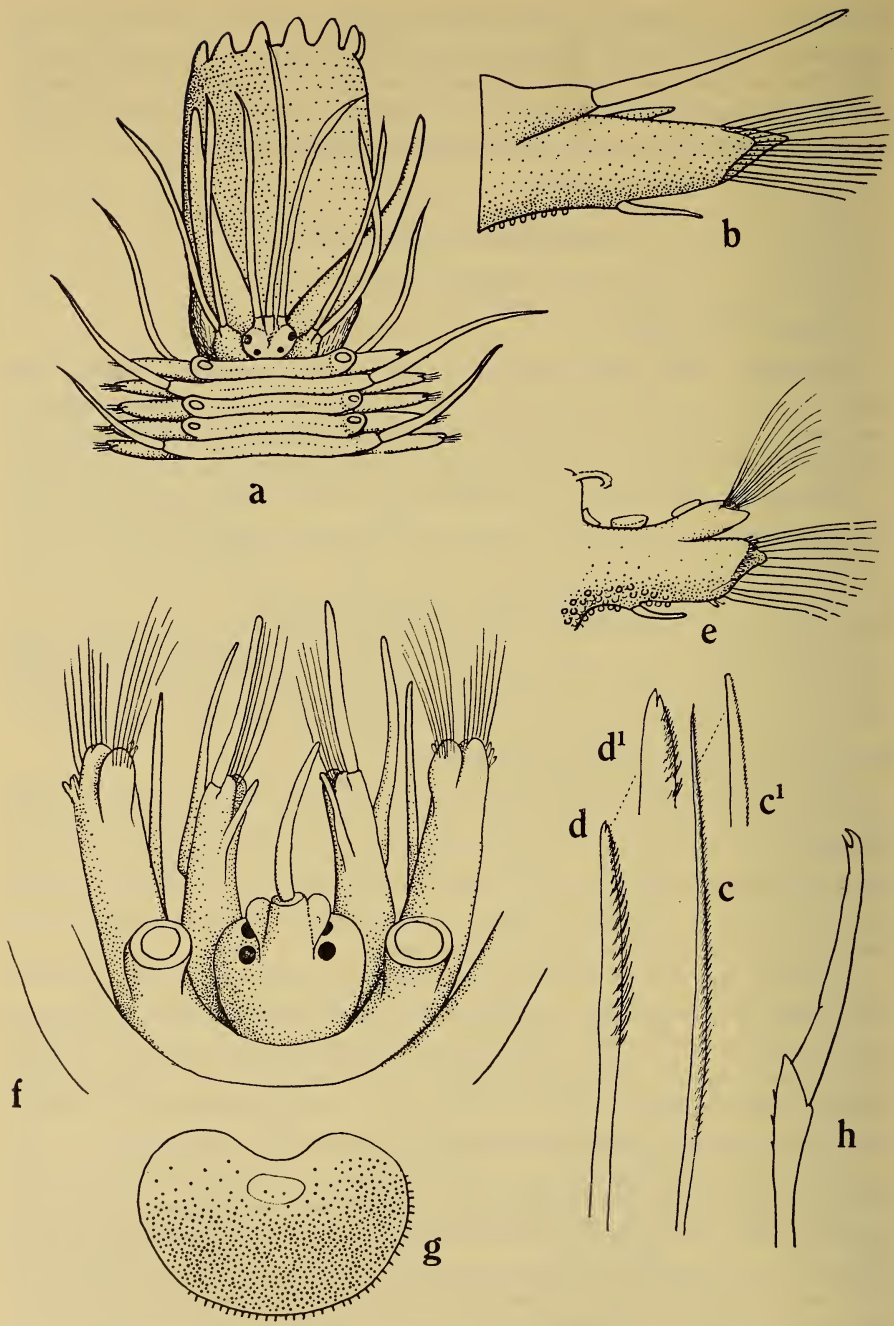


FIG. 3. *Lepidasthenia brunnea: a* head; *b* posterior view of parapodium; *c*, $c^1$ superior neuroseta; *d*, $d^1$ inferior neuroseta.

*Sthenelais papillosa: e* posterior view of parapodium; *f* head; *g* elytron; *h* neuroseta.

The neurosetae are characterized by the possession of a superior group of setae (fig. 3*c*) with long blades feathered to their fine hairlike tips which end in minute knobs. A few such setae are present in the anterior feet of many species of the genus *Lepidasthenia* but in this species there are many of them in all feet. The inferior setae (fig. 3*d*) are stouter and have much shorter feathered blades which end in bidentate tips. The secondary tooth is half the size of the terminal one but the feathering comes so close to the end that the secondary tooth may be obscured.

This species differs from *L. elegans* in many respects particularly the colouration, the persistence of fine unidentate setae, the lack of a giant seta and the possession of papillae on the base of the neuropodia. In *L. maculata* Potts, which has papillae on the ventral surface of the parapodium, the fine superior setae are very few and only present in anterior segments and the bidentate setae have very few rows of serrations. *L. berkeleyae* Pettibone (1948) is close but the antennae are shorter, there are fewer fine neurosetae and there are no ventral papillae on the neuropodia.

### *Lepidasthenia* sp.

*Records:* AFR.790(1).

*Notes:* An anterior fragment of 32 segments measuring 18 mm. was obtained. It is completely colourless with rather glassy setae, and large, delicate translucent elytra.

The general shape of the body, the head and the appendages is similar to *L. brunnea* but there are two important differences. There are no papillae on the ventral surface of the neuropodia and there are no bidentate neurosetae, only fine setae with long blades feathered to their slender hairlike tips.

Since the fragment consists of only 32 segments with 15 pairs of elytra it is impossible to say how many elytra are present in the entire worm. Further, the bidentate type of neurosetae might appear in posterior feet. For these reasons this is not described as a new species.

### *Euphione elisabethae* (McIntosh 1885)

*Euphione elisabethae* McIntosh 1885, p. 62, pl. 9, fig. 3; pl. 17, fig. 7; pl. 18, fig. 10; pl. 8A, figs. 3–6.

*Records:* AFR.691(1), 707(1), 791(1), 1529(1), TRA.21(1).

### *Hololepida australis* Monro 1930

*Hololepida australis* Monro 1930, p. 93, fig. 9 *a–h.*

*Records:* AFR.707(1).

*Notes:* The present material has been compared with Monro's type in the British Museum and found to be conspecific. The nuchal flap is triangular. The elytra which are fragile and deciduous bear numerous three-pronged

tubercles exactly as described by Monro. They are reminiscent of the tubercles of *Halosydna* and indeed the genus *Hololepida* is closely related to *Halosydna*. The notosetae are not smooth as stated by Monro for under high magnification they show steplike serrations. The superior neurosetae are as shown by Monro but his intermediate type was not found. The inferior neurosetae are bidentate and the secondary tooth, though finer than the terminal one, is almost as long so that the ends of these setae seem to be split.

This is a new record for South Africa.

### *Polyeunoa laevis* McIntosh 1885

*Enipio rhombigera* Ehlers 1908, p. 47, pl. 4, figs. 1–12.
*Polynoe agnae* McIntosh 1925, p. 21, pl. 2, figs. 3 and 4.
*Hemilepidia erythrotaenia* (non Schmarda) McIntosh 1925, p. 26, pl. 2, figs. 9 and 10.

*Records:* AFR.789(1), 831(1); TRA.48(1); WCD.3(4).

*Notes:* The present specimens, like those described by Monro (1936), have elytra which are smooth apart from a triangular patch of minute hemispherical tubercles near the point of attachment. These papillae are absent from McIntosh's type. The superior neurosetae have markedly stronger spinules than the inferior ones. Small specimens of 18 and 20 mm. have a minute but distinct secondary tooth on the neurosetae but large specimens are usually unidentate though vestiges of the secondary tooth may occasionally be found among the inferior setae.

The identity of Ehlers' *Enipio rhombigera* with *P. laevis* has long been recognized. A recent examination of the type of *Polynoe agnae* (also called *Eunoa agnae* by McIntosh 1925) which is now in the British Museum (registered number 1924:7:21–27) shows that this is also *P. laevis*. The specimen recorded by McIntosh (1925) as *Hemilepidia erythrotaenia* is in a very poor condition but re-examination again shows that it is also *P. laevis*.

## Subfamily Sigalioninae

### *Pholoe minuta* Fabricius var. *inornata* Johnston 1865

*Pholoe minuta* var. *inornata*. Fauvel 1923, p. 120, fig. 44 *a–h*.
?*Pholoe minuta* Ehlers 1913, p. 450. Augener 1918, p. 118.

*Records:* SB.189(1); FAL.22(1), 152(1), 314(1); SCD.26(1).

*Notes:* The median antenna has a stout base and a slender tip, the whole equalling the length of the prostomium. The eyes are coalescent. The elytra are rounded to reniform and the margins carry soft papillae which are not annulated. The papillae on the neuropodia are not obvious and the shaft-heads of the neurosetae are lightly serrated. Ehlers (1913) recorded *P. minuta* from False Bay and Augener (1918) who recorded the variety *inornata* from South West Africa has discussed its distribution and affinities, but the distinctions between the various species and varieties given by Fauvel (1923) are not very convincing.

*Sthenelais boa* (Johnston) 1833

*Sthenelais boa.* Fauvel 1923, p. 110, fig. 41 *a–l.* Day 1953, p. 406.

*Records:* LB.299(3); TRA.88(1), 133(1).

*Sthenelais limicola* (Ehlers) 1864.

*Sthlenelais limicola.* Fauvel 1923, p. 113, fig. 42 *a–g.*

*Records:* AFR.736(1); ?TRA.106D(1); FAL.184(3), 206(1), 228(1), 237(1), 238(3), 242(1), 341(1), 352(7), 375(3), 376(4), 378(1); ?MB.79(1); SCD.109(1).

*Sthenelais papillosa* n. sp.

(Fig. 3*e–j*)

*Records:* FAL.223(1), 334(1), 341(1).

*Diagnosis:* A species with specked elytra lacking simple serrate neurosetae and having a papillose ventral surface.

*Description:* The type material consists of two fragmentary specimens dredged in False Bay. The larger specimen (FAL.223) is an anterior end of 40 segments and the smaller one FAL.334 is in three fragments but possesses elytra. It is estimated that the larger specimen might have measured 40 mm. by 3 mm. when complete.

The prostomium (fig. 3*f*) is ovoid, a little longer than broad, with a stout median ceratophore and two pairs of well-marked eyes. The 'ctenidia' on the ceratophore are rather small and the ceratostyle is slightly longer than the prostomium. The tentacular segment has a flattened presetal lip, a bundle of simple notosetae, a short dorsal cirriform appendage (which, according to Fauvel (1923), corresponds to the lateral antenna) a large dorsal cirrus (or ? postsetal lobe) and a long ventral cirrus arising from the base of the foot. The body is elongate and the whole of the ventral surface including the midventral line and the bases of the parapodia is densely covered with small spherical papillae. Anterior elytra are not known but those from the middle of the body (fig. 3*g*) are reniform without any external notch and the margins bear minute unicellular papillae which are elongate laterally and spherical posteriorly. The surface of each elytron is speckled with brown and studded with tiny, transparent, very lightly chitinized and flattened tubercles or cushion-like papillae.

The notopodium (fig. 3*e*) has about 6 short stylodes and the usual bundle of long notosetae. The neuropodium has 2–3 short stylodes at the apex of the acicular lobe and a low presetal lip edged with about 8 elongate papillae. The ventral margin of the parapodium as mentioned above, bears numerous spherical papillae and a single short ventral cirrus.

The notosetae are typical. The neurosetae (fig. 3*j*) lack superior simple serrate setae and the compound setae are all very similar. The shafts are stout,

the triangular shaft-heads are lightly serrate and most of the blades are long and simple though some of the short inferior ones have 2–3 poorly marked articulations.

*S. papillosa* has been compared with the types of *S. zeylanica* Willey and also *S. variabilis*, *S. orientalis* and S. *foliosa* Potts (1910) all of which have a papillose ventral surface but in each case other characters differed. *S. papillosa* also approaches *S. minor* in the lack of simple serrate neurosetae but the latter may be distinguished by the possession of elongate and pluriarticulate neurosetae and the lack of papillae on the ventral surface.

### *Sigalion squamatum* Delle Chiaje 1841

*Sigalion squamatum*. Fauvel 1923, p. 104, fig. 39 *m–o*.

*Records:* FAL.243(1), 357(1).

*Notes:* Two anterior fragments were obtained belonging to large specimens probably exceeding 100 mm. Four tiny well-separated eyes are just visible through the skin of the prostomium. The dorsal cirrus of the first setiger is $\frac{1}{2}$–$\frac{3}{4}$ the length of the ventral cirrus but dorsal cirri are absent from the second and subsequent setigers. A clavate presetal papilla appears at the end of the notopodium from the 5th foot onwards. Each elytron is rectangular and the external margin bears simple papillae on its upper surface and bipinnately branched papillae along its external margin, each of these having 7–10 pairs of branches. Rudimentary cirriform gills appear on the medial and lateral margins of the elytrophore of the second or third foot and by the 6th foot the gills are well developed. Later the medial gill decreases in size but the lateral one remains large. The anterior face of the notopodium of each foot has a patch of conical tubercles near its base.

The notosetae are numerous and minutely serrate. The neurosetae are of 5 types: (*a*) about 6 simple bipectinate setae in the superior group above the aciculum. (*b*) About 2 compound setae with coarsely serrate shafts and tapered, pluriarticulate blades. (*c*) About 4 compound setae with swollen, closely serrate shaft-heads and pluriarticulate blades. (*d*) About 6 compound falcigerous setae with fine serrations on the shaft-heads and simple bidentate blades. (*e*) Very numerous inferior compound setae with very lightly serrate shaft-heads and long pluriarticulate blades. All the various types of compound setae of this and all other species of *Sigalion* which have been examined have bidentate tips. Statements to the contrary are probably due to the examination of broken-tipped setae.

This South African material has been compared with specimens of *S. squamatum* from Naples, which is the type locality. The European material shows that the development of the superior 'stylode' (=presetal lobe) of the neuropodium is variable and not of much value in separating *S. squamatum* from *S. mathildae*. Again the pennate marginal papillae on the elytra are not normally as widely different as figures 39 *c* and *m* in Fauvel (1923) would

suggest. I agree with Fauvel that the main difference lies in the setae, though the tubercles on the face of the notopodium are more poorly developed in *S. mathildae*. Incidentally these same tubercles are exceedingly long and occasionally branched in *S. buskii* McIntosh (1885) and suggest that this is a valid species which lacks falcigers with simple bidentate blades. It is also to be noted that Fauvel makes no reference to the medial gill on the elytrophores, and this character was not checked on the Naples material.

*Sigalion capense* n. sp.

(Fig. 4 *a–f*)

*Records:* FAL.237(1), 375(1); MB.4(1).

*Description:* FAL.237 an ovigerous female, is selected as the type. It is 16 mm. long by 2 mm. wide and is broken at the 60th segment. It is quite white in alcohol.

The prostomium (fig. 4*a*) is almost oblong, a little longer than wide and somewhat rounded posteriorly. The two pairs of small eyes are visible through the skin about the middle of the prostomium. The anterior and posterior pair are close together on either side. The antennae are small cylindrical papillae arising from the prostomium at its junction with the forwardly projecting tentacular segment which bears two pairs of subequal tentacular cirri. The palps are long and slender. The ventral cirrus of the second foot is about the same length as the tentacular cirri. A single cirriform branchia arises from the lateral side of the elytrophore of the 4th and all succeeding segments and in anterior segments there is also a small branchia (or ctnidium) on the medial side of each elytrophore.

The posterior elytrophores are swollen with developing eggs. The elytra themselves (fig. 4*c*) are rounded to rectangular with smooth surfaces and bear 10–12 bipinnate papillae on the external margin; each of these has 4–8 pairs of branches (fig. 4$c^1$).

The notopodium (fig. 4*b*) is swollen distally with a single large presetal papilla (stylode) at its end and three glandular cushions on its superior margin. It bears a bundle of long slender setae with hairlike tips. The stouter ones are serrate on the inferior margin.

The neuropodium is obliquely truncate with a bluntly conical acicular lobe, a vestigial presetal lip, a well-developed, trangular postsetal lip and a long tapered ventral cirrus. There are 4 types of neurosetae. The supra-acicular neurosetae include: (*a*) 3–6 simple bipinnate setae (fig. 4*d*); (*b*) 4 fairly stout compound setae (fig. 4*f*) with long pluriarticulate blades and serrated shaft-heads; (*c*) about 10 fairly stout compound setae with long pluriarticulate blades and smooth shaft-heads (fig. 4*e*) The infra-acicular setae include: (*d*) about 4 setae similar to group (*c*) and (*e*) very numerous fine compound setae with long pluriarticulate blades and smooth shaft-heads. It is emphasized that

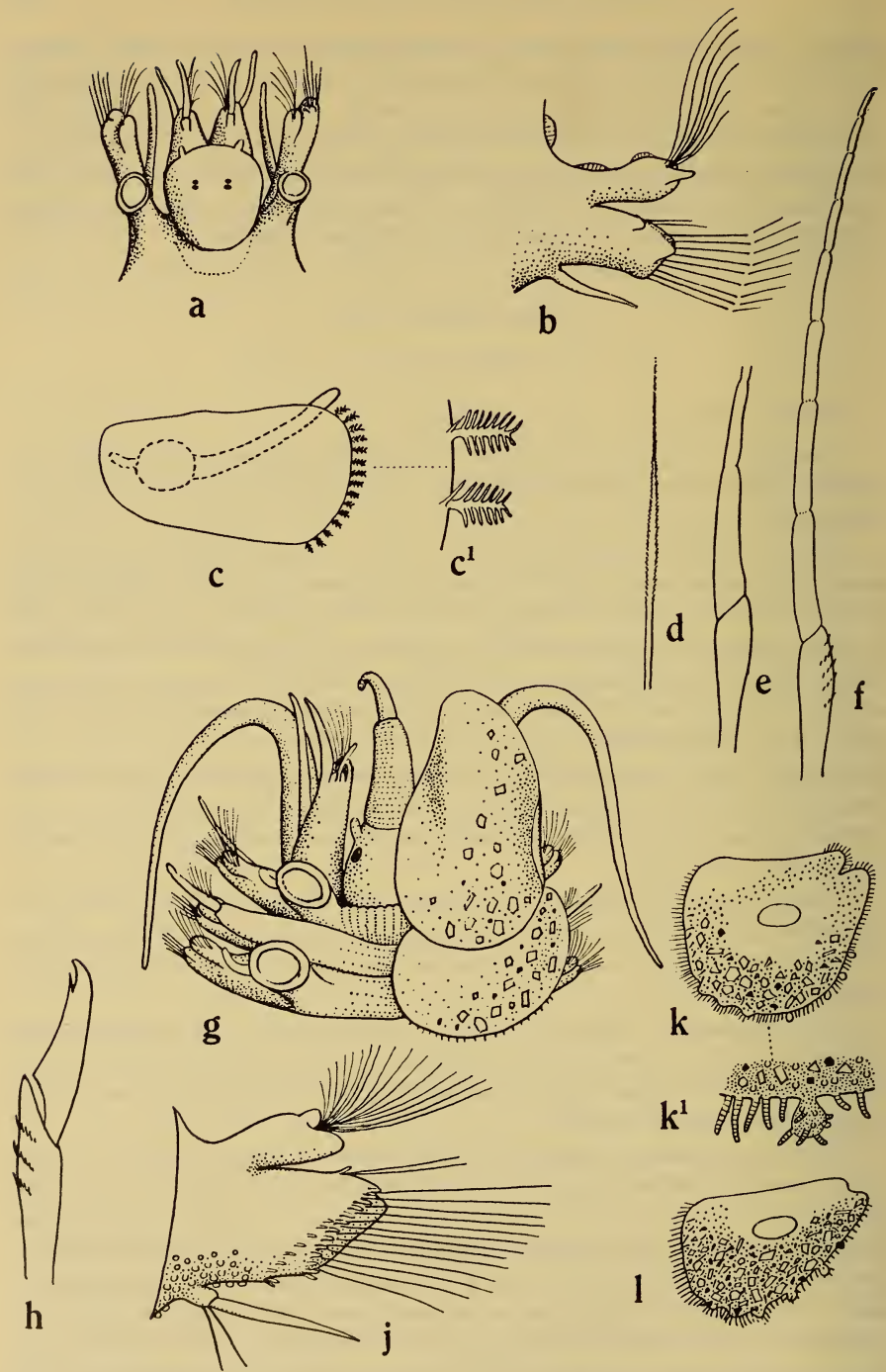


FIG. 4. *Sigalion capense: a* head; *b* parapodium; *c*, *c*[1] elytron and details of marginal papillae; *d* simple serrate neuroseta; *e* smooth-shafted neuroseta; *f* serrate-shafted neuroseta.

*Psammolyce articulata: g* head; *h* neuroseta; *j* parapodium; *k*, *k*[1] 6th elytron and details of margin; *l* posterior elytron.

all compound setae have long pluriarticulate blades with minutely bidentate tips.

*S. capense* may be distinguished from *S. squamatum* and *S. mathildae* by the lack of neuropodial setae with simple blades. In this and other respects it resembles *S. ovigerum* Monro (1924) but the latter carries eggs in its swollen elytra and has supra-acicular neurosetae with excavated shaft-heads as figured by Monro (1936) fig. 12*d*.

*Psammolyce articulata* n. sp.

(Fig. 4 *g–l*)

*Records:* FAL.117(1), 211(2), 214(1).

*Description:* Four broken specimens were obtained and specimen FAL.117 which is in two fragments totalling 50 mm. by 4 mm. for 100 segments was selected as the holotype. It is sandy brown in alcohol with darker setae. The elytra and the uncovered part of the back between them is covered with sand-grains and foraminiferan shells and the ventral surface is completely covered with small rounded tubercles.

The head (fig. 4*g*) is protected between, but not fused to, the forwardly directed first pair of feet which bear the tentacular cirri. The prostomium itself is as broad as long and bears two pairs of large eyes and three antennae. The first pair of eyes are anterior and ventral and concealed beneath the large ceratophore of the median antenna. The posterior pair of eyes is on the sides of the prostomium immediately behind the short stumpy lateral antennae which are quite separate from the tentacular segment. The median antenna is borne on a large ceratophore which curves down like an elephant's trunk.

The first setiger or tentacular segment has well-developed dorsal and ventral rami and two bundles of setae. The notopodium has a rather short dorsal tentacular cirrus and a stumpy setigerous lobe. The neuropodium has a presetal bract, a bundle of neurosetae and a large cirriform postsetal lobe below which is the long tapering ventral tentacular cirrus. The second segment bears the first pair of elytra, a short cirriform gill, two setigerous lobes and a long ventral cirrus. There is no dorsal cirrus. The third segment bears a long stout elytrophore extending almost to the end of the neuropodium and a shorter cirrus.

The elytra (figs. 4 *k–l*) vary along the length of the body but all of them are covered with sand grains. The anterior pair are pear-shaped and extend forward over the head. The margins appear smooth and there are certainly no incisions or large projections. The second pair are reniform. The margins bear minute papillae and the surface is studded with microscopic tubercles. The next few elytra are more rounded (fig. 4*k*) straight in front and with two short lobes on the medial margin and small pear-shaped lappets posteriorly. The surfaces are covered with microscopic tubercles and the papillae are better developed, both on the surface and the margins. *All of them are clearly jointed.*

Further back the two antero-medial lobes tend to disappear (fig. 4*l*) and the 4–5 posterior lappets become irregular. Most of the elytra are roughly triangular and fairly small so that the middle third of the back is uncovered.

The feet (fig. 4*j*) show little change from the 4th onward. The notopodium is well developed. The neuropodium is obliquely truncated with a presetal row of elongate papillae and tufts elsewhere. The lower surface is covered by the rounded tubercles which extend on to the parapodia from the ventral surface. The ventral cirrus is long and tapered and 2–3 very long and slender papillae arise from its base.

The notosetae are numerous and very fine. Each is minutely serrated to its hairlike tip. The neurosetae (fig. 4*h*) are all compound and falcigerous. Those of the second setiger have densely serrated shafts but in later feet the serrations are reduced to 3–5 rows on the shaft-head. The blades are all bidentate but never pluriarticulate.

In his diagnosis of the genus *Psammolyce*, Fauvel (1923) states that the lateral antennae are fused to the first setiger or possibly absent in *P. inclusa*. Monro (1936) makes the same remark. In the present species as stated, the lateral antennae arise from the prostomium which is quite separate from the first setiger. *P. articulata* is also characterized by the possession of jointed papillae on the elytra. Faint indications of jointing were seen in the papillae of *P. semiglabra* Monro (1936), the type of which was examined, but the two species differ in many characters. Possibly *P. articulata* comes closest to *P. zeylanica* Willey (1905) in the shape of the elytra but the latter again has the lateral antennae fused to the first setiger.

### *Thalenessa oculata* (Peters) 1854

*Euthalenessa dendrolepis* (Clap.) Fauvel 1923, p. 114, fig. 42 *h–o*.
*Euthalenessa oculata* Day 1953, p. 407.

*Records:* SB.207(1); TB.301(1), 304(4); FB.312(1), 321(1); FAL.233(1), 238(1), 349(3); SCD.105(2 juveniles).

## Family *CHRYSOPETALIDAE*

### *Bhawania goodei* Webster 1884

*Bhawania goodei*. Augener 1918, p. 98, pl. 2, figs. 1–2, text-fig. 1. Day 1953, p. 407.

*Records:* False Bay—21 records on rocky or shelly bottoms between 0 and 36 metres. MB.13(1), 53(1), 56(1), 77(1), 85(1), 86(1); LIZ.9(1), 27(1), 33(1); SCD.58(1), 89(1).

### *Paleanotus chrysolepsis* Schmarda 1861

*Paleanotus chrysolepis* Schmarda 1861, p. 163, pl. 37, figs. 326–9. Ehlers 1913, p. 450. Day 1957, p. 66.

*Records:* False Bay—15 records on rock or shelly bottoms between 0 and 40 metres.

## Family *AMPHINOMIDAE*

### *Chloeia inermis* Quatrefages 1865

*Chloeia gilchristi* McIntosh 1925, p. 15, pl. 1, figs. 7–8. Day 1934, p. 27, fig. 4 *a–b*.
*Chloeia inermis*. Monro 1936, p. 80.

*Records:* AFR.801(1); TRA.20(1).

*Notes:* The specimens were recovered from the stomachs of fish and are rather soft but they still retain rather vague purplish markings along the middorsal line and the dorsal cirri are purple. Monro states that the gills begin on setiger 5 but here they begin on setiger 4. The setae agree perfectly with Monro's description. A spur is virtually absent from most of the setae though a minute one can be seen on some of the ventral ones. All but a few of the harpoon setae are smooth.

### *Euphrosyne capensis* Kinberg 1857

*Euphrosyne capensis*. McIntosh 1885, p. 1, pl. 2, fig. 5, pl. 1A, figs. 1–3. Day 1953, p. 408.

*Records:* LAM.8(1), 15(1), 31(8), 35(2), 47(1), 51(3), 57(1), 59(3), 63(1); TB.305(1), 323(1); False Bay—17 records between 0 and 42 metres on rock or broken shell; MB.16(2), 49(2), 67(1), 77(1), 78(2); LIZ.18(1)

### *Euphrosyne myrtosa* Savigny 1818

*Euphrosyne myrtosa*. Gravier 1901, p. 254, pl. 10, figs. 147–9.

*Records:* TRA.132(1), 135(1); SCD.40(1).

*Notes:* Ehlers (1913) who previously recorded this well-known species from the Cape was doubtful whether it was distinct from *E. capensis*. Many specimens of varying size were therefore examined and it appears that there is a constant difference in the branchiae. In *E. myrtosa* there are 6–8 branchial trunks and the tips of the branches are blunt and not expanded. In *E. capensis* there are 10–11 branchial trunks and the tips of the branches are swollen and pointed rather like acorns.

### *Eurythoe chilensis* Kinberg 1857

*Pareurythoe chilensis* Hartman 1948, p. 45, pl. 5, fig. 11.
*Eurythoe chilensis* Kinberg 1857, p. 13. Monro 1930, p. 28, fig. 1 *a–e*.

*Records:* FAL.29(1).

*Notes:* The single specimen is 20 mm. long. The caruncle is attached to the dorsum as far back as the second setiger, but a free posterior projection extends back to the fourth setiger. This species is easily distinguished from the tropical *E. complanata* which extends down the Natal coast by its smaller size and the fact that all the spurred setae are lightly serrated in *E. chilensis* and smooth in *E. complanata*. This is a new record for South Africa.

## Family *PHYLLODOCIDAE*

### *Phyllodoce* (*Anaitides*) *madeirensis* Langerhans 1879

*Phyllodoce* (*Anaitides*) *africana* Augener 1918, p. 171, pl. 2, fig. 25; pl. 3, figs. 49–51; text-fig. 11 (*partim*).
*Phyllodoce* (*Anaitides*) *madeirensis*. Fauvel 1923, p. 150, fig. 53 *a–d*.
*Phyllodoce patagonica* (non Kinberg) Monro 1930, p. 72 (partim).

*Records:* AFR.707(1); TRA.56(1), 133(1); FB.316(1); FAL.241(1), 373(1).

*Notes:* By the kindness of the Director of the Hamburg Museum I was able to examine Augener's specimens of *P. africana* from Goree (number V.1986). There are two specimens, one with the proboscis extruded and one with the proboscis retracted; both were quite pale in alcohol, the pigmentation to which Augener refers having faded. The former specimen with the extruded proboscis is clearly on *Anaitides* with 6 lumpy ridges on the distal part of the proboscis and 6 lateral rows each with 8–10 compressed papillae basally. The prostomium is cordate with 4 normal antennae, a pair of large eyes and an occipital papilla in the posterior notch. The first tentacular segment is invisible dorsally but the second and third are distinct. There is no parapodium or setae on the third tentacular segment, the formula being $1 + o\frac{1}{1} + o\frac{1}{N}$. Anterior dorsal cirri are broadly lanceolate but later ones are obliquely truncate near the tip and rhomboidal. The ventral cirri are pointed and longer than the setigerous lobes. This specimen seems to me to be a typical *P. madeirensis*.

The second specimen with the retracted proboscis was dissected and its proboscis proved to be irregularly covered with large pointed papillae except at the base where the dorsal wall was bare. The prostomium is elongate and deeply incised posteriorly forming a pair of lateral lobes which extend back to segment 2. No occipital papilla was seen. The first tentacular segment is not visible dorsally, the second is partly visible between the posterior lobes of the prostomium but the third segment is fully visible. A small setigerous lobe bearing 2–3 setae is present on tentacular segment 3, the formula thus being $1 + o\frac{1}{1} + S\frac{1}{N}$. Anterior dorsal cirri are broadly lanceolate, almost cordate, but later ones are longer and more asymmetrical with broad cirrophores. The ventral cirri are pointed and about as long as the setigerous lobes. This specimen does not belong to the sub-genus *Anaitides* and should be named *Phyllodoce* (*Phyllodoce*) *africana*.

I have also examined the specimen reported by Monro (1930) from Simonstown under the name of *P. patagonica*. It is quite clearly *P. madeirensis* and may be distinguished from *P. patagonica* by the absence of setae on tentacular segment 3.

It may also be mentioned that some of my own specimens recorded above from deeper dredgings are blotched with dark pigment and some of the dorsal cirri are black and others white. Otherwise they are indistinguishable from the normal green variety of *P. madeirensis*.

### *Phyllodoce* sp.

*Records:* TRA.133(1).

*Notes:* Specimen TRA.133.L certainly belongs to a species which has not been recorded from South Africa before but the preservation is not too good and its exact determination is doubtful in consequence.

The body is brownish blotched with darker pigment. The proboscis appears to be diffusely papillose. The prostomium is cordate and there is a small occipital button in the posterior notch. The first tentacular segment is fused to the prostomium but the second and third are distinct. The tentacular cirri are unusual for they are stout, sausage-shaped and constricted basally. The tentacular formula is $1 + o\frac{I}{I} + S\frac{I}{I}$. The dorsal cirri are ovoid and swollen and the oval ventral cirri are a little larger than the blunt setigerous lobes. The setae have oval shaft-heads and short blades.

### *Phyllodoce macrophthalma* Schmarda 1861

*Phyllodoce macrophthalma.* Fauvel 1923, p. 146, fig. 51 *f–g*.

*Records:* MB.20(1).

*Notes:* The single 12 mm. specimen is referred to *P. macrophthalma* with some hesitation. The body is slender and dark green. The prostomium is cordate with a very small posterior notch and the presence of an occipital button is doubtful. The proboscis on dissection seems to be lightly papillose. The first tentacular segment is fused to the prostomium but the second and third are distinct. All the tentacular cirri are well developed and cylindrical, the formula being: $1 + S\frac{I}{I} + S\frac{I}{I}$.

The dorsal cirri are cordate, possibly a little longer than broad and the ventral cirri are ovoid. The setigerous lobe has a notched presetal lip and bears numerous setae with oval shaft-heads striated distally and fairly short blades.

Schmarda (1861) stated that the dorsal cirri are rhomboidal but both Ehlers (1913) who recorded this species from Simonstown and Fauvel (1923) follow Saint-Joseph (1888) and describe cordate dorsal cirri. I have not seen the latter paper.

*Phyllodoce* (*Anaitis*) *capensis* n. sp.

(Fig. 5 *a–c*)

*Records:* FAL.316(1); TRA.133(1).

*Description:* Specimen FAL.316 which measures 35 mm. by 1·5 mm. for about 100 segments was chosen as the holotype. It is depressed and tapered posteriorly and is creamy white in alcohol.

The prostomium (fig. 5*a*) is broadly rounded anteriorly and produced posteriorly. The frontal antennae are well developed, the eyes are large and there is a small occipital button. The first and second tentacular segments are fused and form a sort of transparent shield which grows forwards over the sides of the prostomium to cover part of the eyes but the occipital button in the mid-dorsal line is not covered. The third tentacular segment is distinct. All the tentacular cirri are cylindrical and tapered but $T_1$ and $V_2$ are shorter than $T_2$ and $T_3$. There is a small setigerous lobe on the third tentacular segment so that the tentacular formula is: $1 + o\frac{I}{1} + S\frac{I}{N}$.

The proboscis was not extruded and dissection was not entirely successful. The distal part definitely has 6 longitudinal rows of large soft papillae or rugosities but the oral end is indistinct. There were no obvious rows of papillae and it may be smooth.

The papapodia and dorsal cirri (fig. 5*b*) are essentially similar throughout the length of the body. The dorsal cirri are fairly large and rounded to broadly cordate but they do not cover the back. The ventral cirrus is oval and larger than the setigerous lobe which has a notched presetal lip and bears about 12 fine heterogomph spinigers. The shaft-head (fig. 5*c*) is asymmetrical with a large curved tooth accompanied by 3–4 smaller denticles on one side and a smaller tooth on the other side. The finely serrated blade is long, fairly broad basally and tapers gently towards the tip.

This South African species is obviously related to *P.* (*A.*) *kosteriensis* Malmgren from northern Europe but differs in several respects. The shield formed by the fusion of $T_1$ and $T_2$ is better developed, the proboscis is different, the dorsal cirri are proportionately longer and the setae have slightly different shaft-heads. *P.* (*A.*) *wahlbergi* Malmgren from the Arctic is, according to Bergström (1914) a much broader worm with a single blunt tooth on the shafthead of the seta.

*Phyllodoce castanea* Marenzeller 1879

*Genetyllis castanea* Bergström 1914, p. 158, pl. 3, fig. 4, text-fig. 53.
*Phyllodoce rubiginosa* Augener 1918, p. 168.

*Records:* SB.120(1); FB.302(2), 307(3); FAL.128(1), 266(1); MB.23(1).

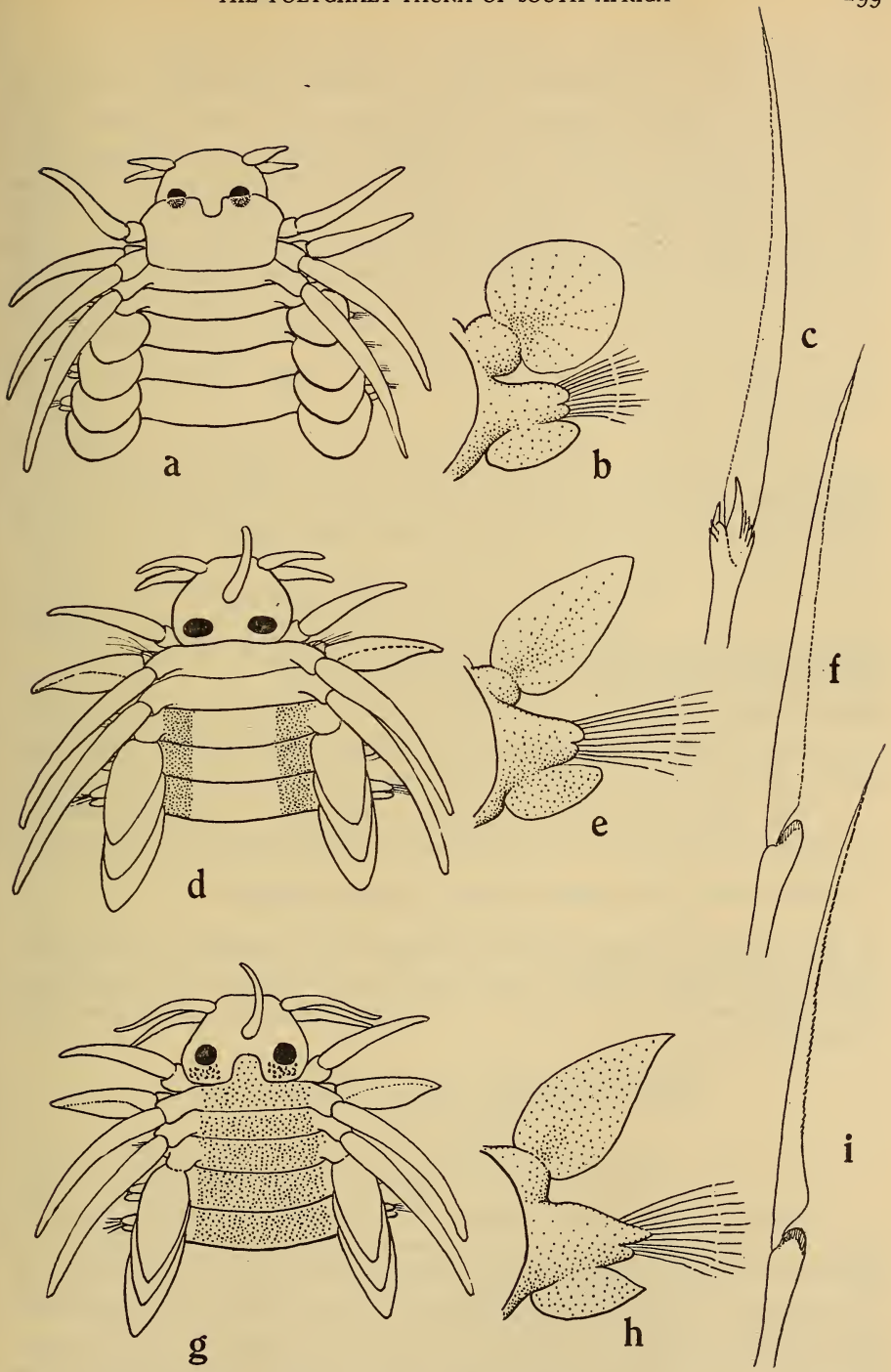


FIG. 5. *Phyllodoce* (*Anaitis*) *capensis: a* head; *b* anterior view of parapodium; *c* seta.
*Eulalia bilineata: d* head; *e* anterior view of parapodium; *f* seta.
*Eulalia macroceros: g* head; *h* anterior view of parapodium; *i* seta.

*Notes:* The Director of the Hamburg Museum very kindly sent me the specimen V.8731 recorded by Augener 1918 from Swakopmund under the name of *Ph. rubiginosa*. The proboscis was retracted but when dissected proved to be very long and covered with irregularly arranged conical papillae. The whole specimen is rusty red all over with an ovoid prostomium not notched posteriorly and fused to tentacular segment 1. The antennae are very small. All the tentacles are short, tapered and rounded. Tentacular segment 1 is not visible dorsally but 2 and 3 are distinct and bear setigerous lobes with numerous setae the formula being $1 + S\frac{I}{1} + S\frac{I}{N}$. Dorsal cirri are broadly cordate and almost symmetrical. Ventral cirri are ovoid to reniform and extend beyond the rounded setigerous lobes.

*P. castanea* and *P. rubiginosa* are very alike but the latter is described by Fauvel as having large not small antennae and he figures the dorsal cirri as asymmetrical. Certainly Augener's specimen from Swakopmund is very like mine from the western and southern coasts of the Cape.

### *Eulalia* (*Steggoa*) *capensis* Schmarda 1861

*Eulalia capensis* Schmarda 1861, p. 86, pl. 29, fig. 231. Willey 1904, p. 259.
*Eulalia viridis* var. *capensis* McIntosh 1904, p. 34. Day 1953, p. 30.
*Eulalia viridis* (non Muller) Ehlers 1913, p. 455. Day 1934, p. 30.
*Steggoa magalhaensi* (non Kinberg) Augener 1931, p. 284.

*Records:* LAM.18(1), 59(3), 63(1); FB.302(1), 326(1); FAL.23(1), 29(1), 44(2); 69(1), 106(1), 149(1), 245(1), 334(1); TRA.123(1).

*Notes:* This species although generally similar to *E. viridis* differs in having a more flattened ventral tentacular cirrus on the second tentacular segment and in lacking setae on the same segment so that the formula is $1 + o\frac{I}{1} + S\frac{I}{N}$. It thus belongs to Bergström's genus *Steggoa* here relegated to a sub-genus. On the other hand I cannot agree with Augener (1931) that it is identical with *Steggoa magalhaesi* Kinberg which has spear-shaped dorsal cirri three times as long as broad.

### *Eulalia* (*Hypoeulalia*) *bilineata* (Johnston) 1840
(Fig. 5 *d–f*)

*Records:* SB.197(1); FAL.371(1); MB.66(2), 87(2); SCD.40(3).

*Description:* These South African specimens differ in several important respects from the descriptions given by Bergström (1914), p. 165, text-fig. 57, and Fauvel (1923), p. 162, fig. 58 *a–e*, which themselves differ in minor respects. For this reason a full description is given below. The largest of the 3 specimens from SCD.40 measures 20 mm. by 1 mm. for 155 segments. It is a slender yellowish worm with two dark green stripes along its back just above the parapodia. These colours persist in alcohol.

The prostomium (fig. 5*d*) is rounded in front and almost straight posteriorly. The frontal antennae are well developed and the median antenna arises well in front of the eyes which are relatively large. The proboscis is covered with small conical papillae. The relation between the prostomium and the first tentacular segment is difficult to ascertain. In contracted specimens the two seem to be fused but in expanded specimens the first tentacular segment seems to be reduced dorsally but not actually fused to the prostomium. The second and third tentacular segments are definitely distinct. The three dorsal tentacular cirri are cylindrical and those on the second and third segment are rather long; on the other hand $V_2$ is short and flattened though not bladelike as in the sub-genus *Sige*. The second and third tentacular segments have setigerous lobes with setae so that the tentacular formula is $1 + S\frac{I}{1} + S\frac{I}{N}$.

The body segments do not change appreciably along the length of the worm. The dorsal cirrus (fig. 5*e*) is bluntly lanceolate in adults but distinctly broader, almost cordate in juveniles. The setigerous lobe is bluntly rounded and, as usual, the presetal lip is deeply notched. The ventral cirrus is ovoid. The 12–16 setae are heterogomph spinigers (fig. 5*f*) with ovate shaft-heads striated distally and lightly serrated blades of normal length.

According to Bergström, *Hypoeulalia bilineata* has the first segment fused to the head, $V_2$ is cylindrical and the dorsal cirri are ovoid. According to Fauvel (1923) *Eulalia bilineata* has the first segment narrowed but fairly short and the dorsal cirri are stout and oval-obtuse. Judged by these descriptions the most marked difference between South African and European specimens concern the shape of $V_2$.

This is a new record for South Africa.

### *Eulalia* (*Eumida*) *sanguinea* (Oersted) 1843

*Eulalia* (*Eumida*) *sanguinea*. Fauvel 1923, p. 166, fig. 59 *f–k*.

*Records:* LAM.22(1); LB.161(2), 382(1); FB.316(1); FAL.70(3), 376(1); MB.86(1); SCD.9(3), SCD.109(1).

### *Eulalia* (*Pterocirrus*) *macroceros* Grube 1860

(Fig. 5 *g–i*)

*non Sige macroceros* Bergström 1914, p. 136, text fig. 40.
*Eulalia* (*Pterocirrus*) *macroceros* Fauvel 1923, p. 167, fig. 60 *d–g* (*partim*).
*Eulalia* (*Pterocirrus*) ?*macroceros* Day 1953, p. 411.

*Records:* MB.66(1), 86(1).

*Description:* The discovery of two further specimens allows me to confirm my previous identification, and to complete the description.

The body is broad and short and dark green in life but brownish in alcohol. The prostomium (fig. 5*g*) is cordate with a large posterior excavation containing a dark cushionlike lobe which may represent the dorsal remnant of the first

tentacular segment. The eyes are large and there are usually pigment granules behind them. The two pairs of frontal antennae are surprisingly long and the dorsal antenna arises slightly in front of the eyes. The proboscis has not been seen everted but on dissection the base proves to be smooth but further along there are large soft rugosities. It is certainly not densely covered with cylindrical papillae as in *Eulalia viridis* or *E. capensis*.

The first tentacular segment is fused to the prostomium and bears a pair of cylindrical tentacular cirri. The second segment is distinct and bears a pair of long cylindrical dorsal tentacular cirri on swollen cirrophores, a pair of flattened, often blade-like ventral cirri but there is neither setigerous lobe nor setae. The third tentacular segment bears a long cylindrical dorsal cirrus, a normal foliaceous ventral cirrus but no setigerous lobe or setae. The tentacular formula is thus $1 + 0\frac{1}{1} + 0\frac{1}{N}$.

The parapodia (fig. 5*h*) are very similar throughout the length of the body. The dorsal cirri are elongate-cordate and pointed, the setigerous lobe has the usual bilobed presetal lip but here the larger superior lobe is pointed and the ventral is best described as orbicular with a pointed end. The setae are very numerous (*c.*40). Each has a very slightly expanded shafthead faintly striate distally (fig. 5*i*) and a blade of normal length which is broad and almost smooth basally and then suddenly narrows and becomes strongly serrated.

As will be seen, the above description does not agree with that given by Bergström (1914) and differs in several respects from that given by Fauvel (1923). In a private communication Dr. K. Banse has informed me that my (1953) description agreed almost exactly with his specimen from Naples, and went on to say that *E. macroceros* from the Mediterranean (type locality Quarnero in the Adriatic) is not synonymous with the boreal species *E.* (*Sige*) *fusigera* Malmgren (1865) (described from Koster-Inseln and Skelderviken in Sweden and Drobnak in Norway).

Bergström's description is based on the Swedish material and should be referred to *E.* (*S.*) *fusigera*. Fauvel presumably had more than one species before him.

Some doubt remains regarding the subgenus to which *E. macroceros* should be referred. It does not fit exactly into any of the numerous genera used by Bergström, and certainly cannot be referred to *Sige* which has setae on the second and third tentacular segments. It is suggested here that it should be referred to Claparède's *Pterocirrus* established for *P. velifera* Claparède (1865) from Naples which according to Grube (1880) is synonymous with *E. macroceros*. If this be accepted *Pterocirrus* should be defined as a subgenus of *Eulalia* with the first tentacular segment fused to the prostomium which has a posterior excavation containing a cushion-like lobe. The second and third tentacular segments are distinct, and tentacular cirrus $V_2$ is flattened. There are no setae on any of the tentacular segments, formula being: $1 + 0\frac{1}{1} + 0\frac{1}{N}$.

*Eulalia* (*Sige*) *falsa* n. sp.

(Fig. 6 *a–c*)

*Records:* FAL.187(2), 338(1); MB.87(1).

*Description:* The type material consists of the two specimens from FAL.187 dredged in False Bay. One is a regenerating individual 17 mm. long by 1·5 mm. wide with 60 segments and an everted proboscis. It is brownish in alcohol. The other is a juvenile 9 mm. long by 1 mm. wide with 60 segments. A fresh specimen (FAL.338) has a brown dorsum with a paler head and parapodia.

The body is elongate and of the usual proportions. The prostomium (fig. 6*a*) is cordate with a pair of large eyes, subulate frontal antennae and a median antenna which arises between the eyes. The first tentacular segment is fused to the head but there is an area between the posterior lobes of the prostomium which may represent the dorsal remains of this segment, or an anterior projection of segment 2. The second and third tentacular segments are distinct and bear long, dorsal, tentacular cirri. Tentacular cirrus $V_2$ is flattened and may even be blade-like in juveniles. Both the second and third tentacular segments bear setae but those on the second segment are very few and arise from the ventral cirrophore, there being no separate setigerous lobe on this segment. A small setigerous lobe with numerous setae is present on the third segment and below this is the foliaceous ventral cirrus, the tentacular formula being: $1 + S\frac{I}{I} + S\frac{I}{N}$. The extruded proboscis is faintly hexagonal with 6 low longitudinal ridges. The surface is covered with very small and poorly marked papillae so that on first inspection it appears to be smooth. The opening is encircled by 20 large rounded papillae.

The parapodia of the adult (fig. 6*b*) are very similar throughout. The dorsal cirrus is elongate-cordate with a pointed apex, and in specimen MB.87 there is a dark central spot. The setigerous lobe has a bilobed presetal lip, the superior lobe being large and pointed and the inferior lobe being small and blunt. In the juvenile specimen these characters are more marked and the superior lobe has a very long pointed lobe. The setae (fig. 6*c*) are numerous fine heterogomph spinigers with very slightly expanded shaft-heads bearing about 4 small denticles at the distal end. The blades are smoothly tapered and finely serrated.

This species is rather similar to Bergström's description of *Sige macroceros* which, as shown above, really refers to *E.* (*S.*) *fusigera*. However there are differences in the shape of the prostomium, the nature of the proboscis, the shape of the cirri and the structure of the setae. Later work may show that this South African material is conspecific with *E.* (*S.*) *fusigera* from northern Europe, but to avoid further confusion in the synonymy it is as well to keep them separate at present.

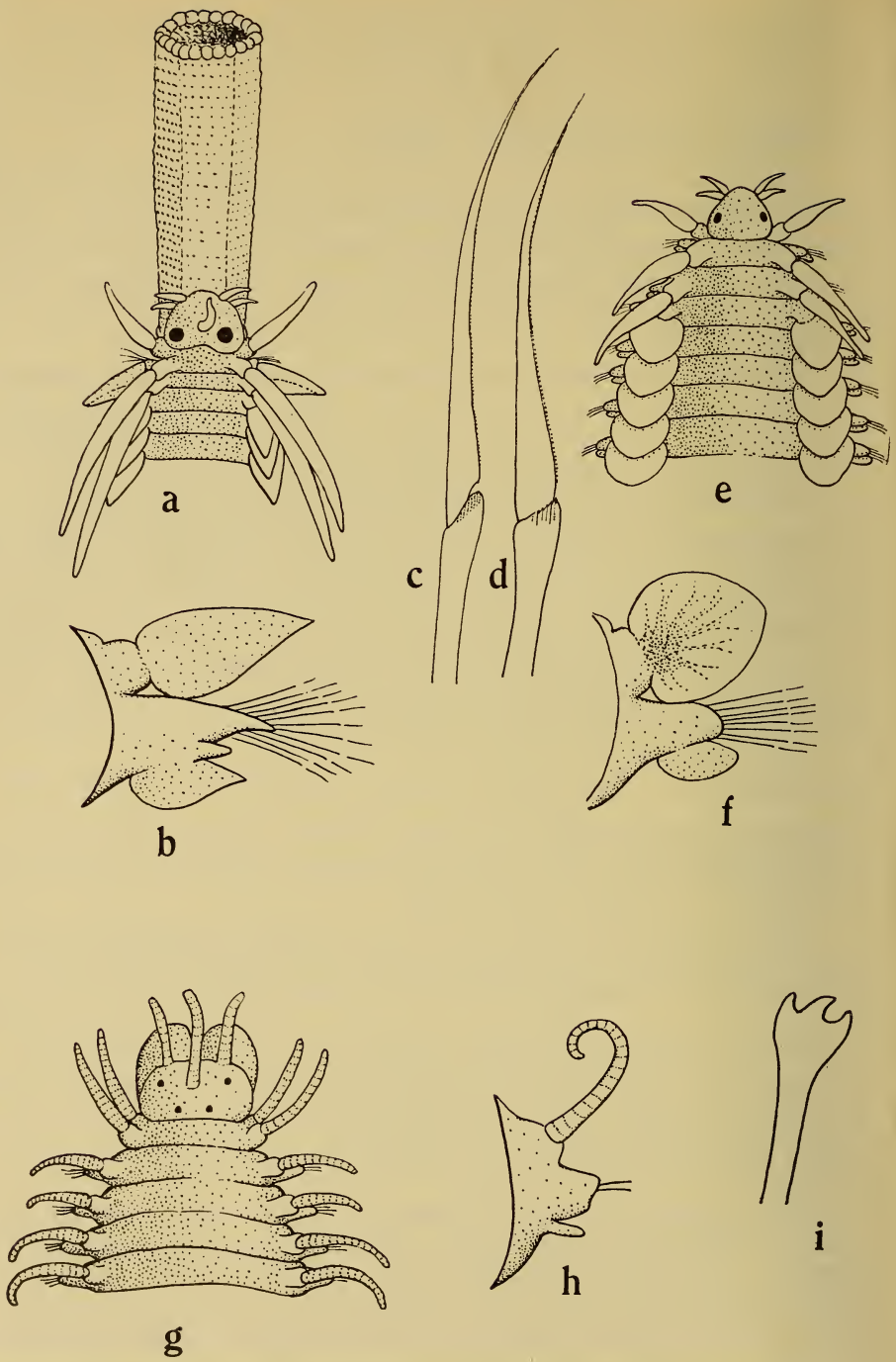


FIG. 6. *Eulalia falsa: a* head and proboscis; *b* anterior view of parapodium; *c* seta. *Protomystides capensis: d* seta; *e* anterior end; *f* anterior view of parapodium. *Syllis trifalcata: g* head; *h* parapodium; *i* seta.

### *Eulalia trilineata* Saint Joseph 1888

*Eulalia trilineata.* Fauvel 1923, p. 162, fig. 57*m*.
*Eulalia near albopicta* Day 1951, p. 20.
*Eulalia near trilineata* Day 1953, p. 410.

*Records:* LAM.5(1), 10(1), 22(1), 35(1); FAL.22(2), 27(3), 81(1), 103(2), 113(7), 128(1), 131(1), 145(2), 152(1), 219(1), 245(1), 260(2), 262(2); LIZ.29(1).

*Notes:* The numerous specimens now available allow me to confirm the identity of this common South African species with Fauvel's brief description. Apart from the colour pattern the setae are quite characteristic. There are relatively few setae (10–15), the shaft-heads are markedly swollen and the blades are very short and strongly tapered. In 1951 I suggested that a specimen from Port St. Johns was close to *E. albo-picta* Marenzeller from Japan. Since then I have been able to consult Izuka (1912) who gives an excellent description of this species. It has tentacular cirrus $V_2$ flattened and there are setae on the second tentacular segment. In *E. trilineata* $V_2$ is almost cylindrical and there are no setae on the second tentacular segment.

### *Notophyllum splendens* (Schmarda) 1861

*Notophyllum splendens.* Day 1953, p. 408, fig. 2 *h–k*.

*Records:* LAM.44(1); TB.302(1), 303(1), 309(1), 310(1); TRA.122(1), 143(1); FAL.27(1), 31(p), 56(1), 80(p), 149(1), 162(1).

### *Eteone foliosa* Quatrefages 1865

*Eteone foliosa.* Fauvel 1923, p. 174, fig. 62 *g–k*. Day 1953, p. 411.

*Records:* SB.183(3), 189(1), 195(1); LB.323(1); TB.301(1); FB.302(1); FAL.110(1); FAL.113(3); FAL.228(1); ?FAL.375(2).

### *Eteone* (*Mysta*) *syphodonta* (Delle Chiaje) 1822

*Eteone* (*Mysta*) *siphonodonta.* Fauvel 1923, p. 178, fig. 63 *e–h*.

*Records:* FAL.349(1); TRA.113(1); SCD.61(1).

*Notes:* The body is brown to mauve dorsally and pale ventrally. The prostomium is white, bluntly triangular and depressed with a pair of eyes which are visible through the skin. The two pairs of antennae are subequal and rather slender. The tentacular cirri are equal. The first normal segment lacks a dorsal cirrus but has a small ventral cirrus and a setigerous lobe with several setae. The dorsal cirri are 1·5–2 times as long as broad and borne on rather long broad cirrophores. The ventral cirri are bluntly pointed and a little longer than the blunt setigerous lobes. There are 15–20 setae with fairly long, evenly tapered blades and shaft-heads which are asymmetrical having one large tooth and 3–5 denticles. The proboscis when dissected proved to have two ventro-lateral

rows of large triangular papillae, a broad brownish dorsal band of minute flattened and denticulate papillae and a much narrower ventral band of slightly larger globular papillae.

This is the first record from South Africa but the above description agrees very well with that of Fauvel with the exception that the dorsal cirri are a little longer.

*Eteone* sp.

*Records:* TRA.108(1).

*Notes:* Specimen TRA.108.K is an unidentified species of *Eteone* new to South Africa. It is dirty white in alcohol and 15 mm. long. The prostomium is unusually long and slender and somewhat reminiscent of a *Glycerid.* It is tapered and over twice as long as the basal breadth with two pairs of stumpy antennae one behind the other and a pair of well-developed eyes posteriorly. Behind the eyes the head swells out to encompass the proboscis which had been lost. The two pairs of tentacular cirri are very small; the dorsal pair is no more than an elongate papilla and the ventral is only one-third the breadth of the tentacular segment. The next segment has only a ventral cirrus there being neither a dorsal cirrus nor setigerous lobe nor setae. All the parapodia are small. The dorsal cirrus is roughly semicircular and no broader than its cirrophore. The setigerous lobe is rather elongated with a blunt apex and the ventral cirrus is ovoid. There are about 10 setae per bundle each having an asymmetrical shaft-head with a large tooth on one side and a minute one borne on a projecting lobe on the other. The blade is broad basally but tapers rapidly to a slender tip.

This species is definitely new to South Africa and the slender prostomium and tiny tentacular cirri suggest that it may be a new species but until the nature of the proboscis is known it is not advisable to give it a specific name.

*Protomystides capensis* n. sp.

(Fig. 6 *d–f*)

*Records:* TRA.86(1); WCD.28(1).

*Description:* The holotype is a slender orange worm from TRA.86 richly speckled with red. It is 17 mm. long by 0·7 mm. wide with 110 segments, and is well tapered at each end.

The prostomium (fig. 6*e*) is small and cordate, a little longer than broad with two pairs of slender antennae and a pair of laterally placed eyes. Dissection showed that the proboscis had been lost. There are 3 pairs of small subulate tentacular cirri on three segments according to the formula $1 + S\frac{I}{N} + S\frac{I}{N}$. The first tentacular segment is fused to the prostomium and its cirrus is cylindrical and markedly tapered distally. The second segment is broad and

distinct, its dorsal cirrus is oval in section and about 1·5 times as long as the prostomium. The setigerous lobe is well developed and bears several setae. The ventral cirrus ($V_2$) is quite definitely similar to those of normal body segments. The third tentacular segment is also distinct but rather narrow and its cylindrical dorsal cirrus is markedly tapered and only two-thirds the length of that on the second segment. The setigerous lobe, setae and ventral cirrus are similar to those of the succeeding body segments.

Normal body segments are depressed and the dorsal cirri are well to the sides so that most of the back is uncovered. Each dorsal cirrus (fig. 6*f*) is symmetrically cordate and about as broad as long. The setigerous lobe is rather long and has a simple blunt apex, the presetal lobe not being notched as is the case in most Phyllodocids. The ventral cirrus is ovoid and possibly a little longer than the setigerous lobe. There are about 12–18 compound setae (fig. 6*d*) with swollen, symmetrical and almost truncate shaft-heads which bear a series of very fine subequal teeth distally. The blade is short and strongly tapered.

*Protomystides* is a rare genus and as far as I am aware no species has been described from the southern oceans, certainly none has been described from South Africa. Bergström (1914) describes *P. bidentata* from the North Atlantic and Mediterranean as having all the tentacular segments fully developed, and free from the prostomium.

## Family *HESIONIDAE*

### *Syllidia armata* Quatrefages 1865

*Magalia perarmata* Mar. et Bobr., Fauvel 1923, p. 246, fig. 92.

*Records*: SB.115(1), 183(3), 184(1), 207(1); TRA.86(1), 88(1); FAL.31(1), 43(2), 136(6), 145(1), 164(2), 174(1), 266(1), 275(1), 283(1); MB.88(1); LIZ.9(2).

### *Kefersteinia cirrata* (Keferstein) 1863

*Kefersteinia cirrata*. Fauvel 1923, p. 238, fig. 89 *a–e*.

*Records*: FAL.283(4).

*Notes:* This is a new record for South Africa, but the characters agree very well with Fauvel's description.

## Family *SYLLIDAE*

### *Syllis* (*Haplosyllis*) *spongicola* Grube 1855

*Syllis* (*Haplosyllis*) *spongicola*. Fauvel 1923, p. 257, fig. 95 *a–d*.

*Records:* AFR.707(1), 842(1); TRA.151(1); MB.16(2); SCD.54(1).

*Syllis* (*Haplosyllis*) *trifalcata* n. sp.
(Fig. 6 *g–i*)

*Records:* FAL.216(1).

*Diagnosis:* The dorsal cirri have 8–12 joints, and the setae have 3 falcate teeth.

*Description:* The holotype is 9 mm. by 0·4 mm. with 88 segments. There are no colour markings. The head (fig. 6*g*) is broader than long with rather flattened palps bent ventrally but not united at the base. The antennae are subequal and rather short. There are 4 eyes. The pharynx has an anterior dorsal tooth and extends back to setiger 9 and the cylindrical proventriculus with 40 rows of points then extends on to setiger 16.

The tentacular cirri and dorsal cirri are short, tapered and twist like pigs' tails; they have 9–12 well-marked joints. The setigerous lobes (fig. 6*h*) are obliquely truncate cones and the ventral cirri are small. There are 2 acicula with blunt tips. Each parapodium contains 3–6 simple setae (fig. 6*i*) which are all similar, each having an expanded end (corresponding to the shaft-head) bearing 3 claw-like teeth of about the same size.

The common *S.* (*H.*) *spongicola* Grube has dorsal cirri with more joints and the setae are roughly like boat-hooks with 2 small teeth above a large triangular rostrum. *S.* (*H.*) *depressa* Augener 1913 from Australia has setae with only 2 teeth rather like the open beak of a bird. *S.* (*H.*) *abberans* Fauvel 1919 from Indochina is fairly close but the dorsal cirri are long and apparently not jointed; moreover the setae are narrowed before the apex which has teeth approaching those of *S.* (*H.*) *spongicola*.

*Syllis vittata* Grube 1840

*Syllis vittata*. Fauvel 1923, p. 263, fig. 98 *i–l*. Day 1953, p. 412.

*Records:* LAM.22(1); FAL.82(1), 134(1), 171(2); MB.66(1).

*Notes:* Specimens LAM.22.W and FAL.171.Z are doubtfully referred to *S. vittata*. The body is creamy white without markings and rather stout. The pharynx is short. Dorsal cirri have about 20 joints. The setae always have a very small secondary tooth and in the middle of the body they tend to be short and hooked.

*Syllis variegata* Grube 1860

*Syllis variegata*. Fauvel 1923, p. 262, fig. 97 *h–n*. Day 1953, p. 412.

*Records:* LAM.22(1); SB.189(1), 197(2); WCD.8(2), 19(4); FB.307(4); FAL.8(p), 113(2), 128(1), 131(1), 134(1), 145(2), 156(5), 162(12), 174(2), 178(2), 302(1), 303(1); MB.86(1); LIZ.2(1), 9(1), 29(1).

*Syllis prolifera var. zonata* (Haswell) 1886

*Syllis zonata* Augener 1918, p. 236, pl. 4, fig. 86; pl. 5, fig. 107, text-fig. 19.

*Records:* LAM.25(1), 31(1), 44(1), 47(1), 57(1), 59(1); SB.197(1); TB.332(1); FAL.31(8), 81(p), 103(1), 110(p), 128(1), 134(1), 145(2), 149(3), 156(3), 162(20), 166(2), 171(19), 219(1), 275(2), 280(1); LIZ.18(1).

*Notes:* Like *S. variegata* this species has dorsal cirri with 25–35 joints and strongly bidentate setae; it differs in having a short pharynx and in having two narrow black lines across the anterior segments where *S. variegata* has a pattern of broken brown bars.

*Syllis armillaris* Müller 1776

*Syllis armillaris*. Fauvel 1923, p. 264, fig. 99 *a–f*. Day 1953, p. 412.

*Records:* Lamberts Bay 13 records from 17–23 metres on rock. Common. SB.207(1); TB.305(6), 306(1), 308(2), 309(1), 331(4); SH.168(2), 204(1), 366(1), 415(2); WCD.8(2); False Bay—27 records from 0–33 metres on rock (common). AFR.835(1), 967(1); MB.13(1); LIZ.18(1), 36(2), 37(2); SCD. 9(2), 22(1), 106(1).

*Syllis gracilis* Grube 1840

*Syllis gracilis*. Fauvel 1923, p. 259, fig. 96 *f–i*. Day 1953, p. 412.

*Records:* FAL.17(2), 50(1), 166(2), 275(2), 280(1); MB.86(1); LIZ.2(1).

*Syllis hyalina* Grube 1863

*Syllis capensis* McIntosh 1885, p. 193, pl. 33, figs. 8–9; pl. 15A, fig. 21.
*Syllis hyalina*. Fauvel 1923, p. 262, fig. 98 *a–b*.

*Records:* MB.57(1), 86(1).

*Notes:* The type of *Syllis capensis* from the Cape is now in the British Museum. It is a small worm and probably immature. The dorsal cirri are cylindrical not fusiform and have 13 joints anteriorly, 11 in the middle of the body and 10 posteriorly. There are 6–10 strongly bidentate setae per foot.

The specimens from Mossel Bay (MB.57 and 86) are referred to *S. hyalina* with some hesitation for the dorsal cirri have 15–20 joints. The setae are strongly bidentate but in superior setae the two teeth are very close together and project at right angles to the blade somewhat in the fashion shown by Gravier for *S. bouvieri*.

*Syllis cf. trapobanensis* Willey 1905

(Fig. 7*a*)

*Typosillis taprobanensis* Willey 1905, p. 268, pl. 3, figs. 77, 78.

*Records:* TRA.55(4); SCD.54(1).

*Notes:* There are faint transverse bars across the anterior segments when fresh but these soon fade in alcohol leaving the body white. The body is of the usual size (16 mm.) and shape. The palps are rather flattened and short but separate at the base. The pharynx is strongly chitinised and the dorsal tooth is rather small. There is no sign of an occipital flap. The dorsal cirri are rather long and markedly tapered with 20–30 joints. The setigerous lobes are stout and the ventral cirri slender. The setae (fig. 7*a*) are characteristic and all similar. There are 10–12 per bundle and each has a swollen shaft-head with a short almost triangular blade with two large blunt teeth.

*Syllis* (*Langerhansia*) *anops* Ehlers 1897

*Syllis* (*Ehlersia*) *anops* Ehlers 1897, p. 40, pl. 2, figs. 40–45.

*Records:* FAL.248(1).

*Notes:* A single incomplete specimen was obtained measuring 16 mm. for 45 segments. It is a threadlike worm with slender dorsal cirri. The prostomium lacks eyes, has large palps fused at the base and short antennae. The tentacular cirri are a little longer but still shorter than the anterior dorsal cirri. The pharynx has the dorsal tooth at its anterior margin and stretches back to setiger 9. The proventriculus is also long and extends back from setiger 9 to setiger 18. The uniformly slender dorsal cirri are about as long as the body is broad and have 20–25 joints. The setigerous lobe is in the form of an obliquely truncate cone and the ventral cirrus is slender and a little longer than the foot. The setae are similar throughout. In each foot there are 2–3 superior setae with very long tapering swordlike blades which give the impression of having minutely knobbed tips. Below these there are about 12 setae with unidentate blades of normal length.

The South African specimen agrees with Ehlers' species from the Magellan area in all respects save one. Ehlers states that the anterior setae are bidentate and his figure (pl. 2, fig. 44) shows both the *Ehlersia* type and the normal setae each with a small secondary tooth. In my specimen all setae agree with his pl. 2, fig. 45, which shows the blades of both types of setae with unidentate tips.

This is a new record for South Africa.

*Syllis* (*Langerhansia*) *ferrugina* Langerhans 1881

*Syllis* (*Ehlersia*) *ferrugina.* Fauvel 1923, p. 269, fig. 100 *k–u.*

*Records:* SB.183(3), 189(1); FAL.149(1).

*Notes:* This is the first record from South Africa but Augener (1918) recorded it from Angola.

*Syllides longocirrata* Oersted 1845

*Syllides longocirrata.* Fauvel 1923, p. 284, fig. 108 *a–g.*

*Records:* FAL.65(1), 82(1).

*Notes:* The body is small and the pharynx lacks teeth. The antennae, tentacular cirri and the first two pairs of dorsal cirri are unjointed but the

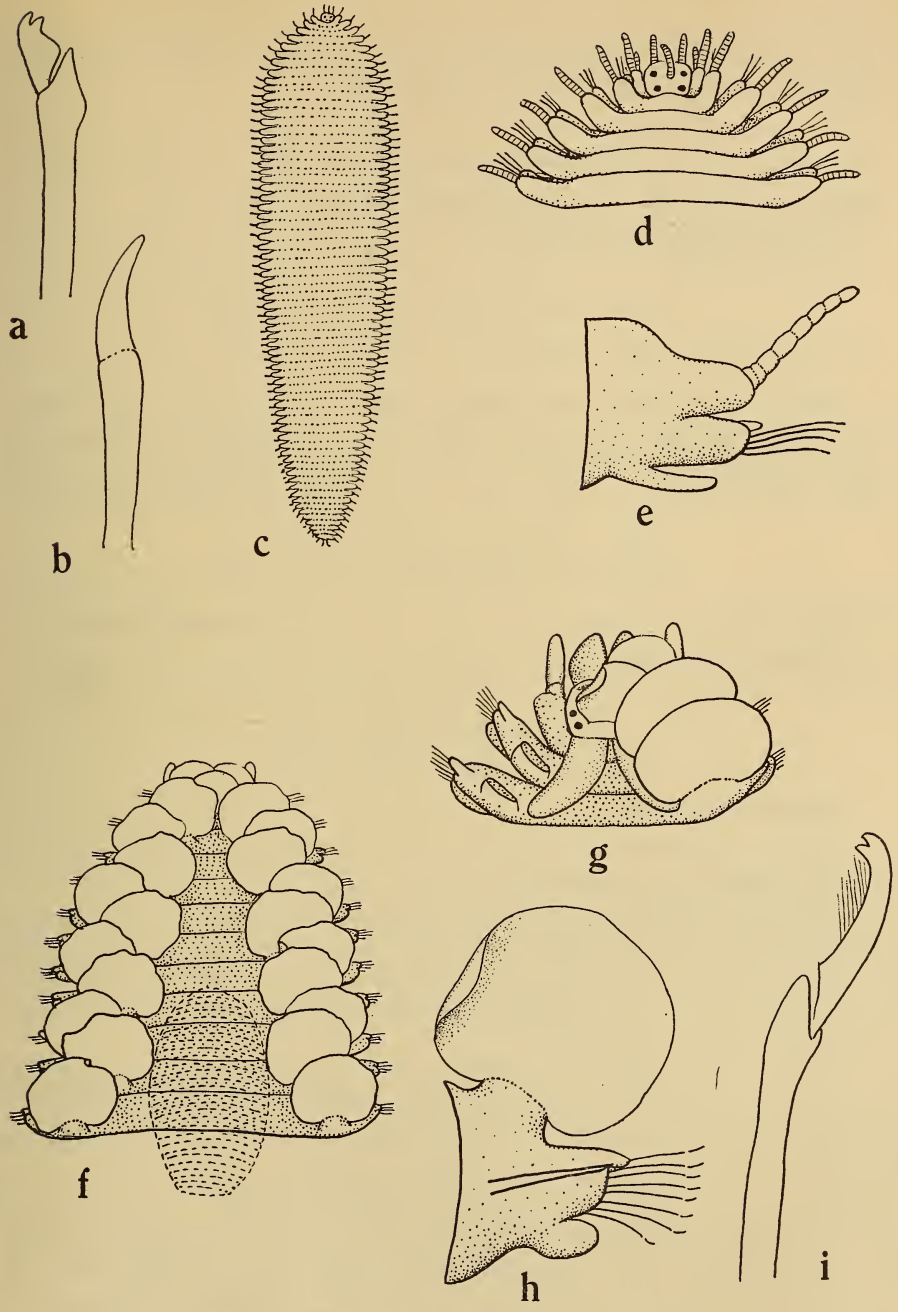


FIG. 7. *Syllis cf. taprobanensis: a* seta.
*Trypanosyllis ankyloseta: b* seta; *c* entire animal; *d* anterior end; *e* middle parapodium.
*Lamellisyllis comans: f* anterior end; *g* head with left antenna and dorsal cirri removed; *h* parapodium; *i* seta.

remaining dorsal cirri are very long and deeply annulated with 12–15 joints. The setae have long tapered blades with indistinct tips which are possibly unidentate. This is a new record for South Africa.

### *Trypanosyllis zebra* Grube 1860

*Trypanosyllis zebra.* Fauvel 1923, p. 269, fig. 101 *a–e.* Day 1953, p. 413.

*Records:* FB.322(1); LIZ.9(1).

### *Trypanosyllis gemmulifera* Augener 1918

*Trypanosyllis gemmulifera* Augener 1918, p. 278, pl. 5, figs. 99–101, text-fig. 27. Day 1953, p. 413.

*Records:* LAM.4(*c*), 10(1), 15(2), 18(3), 22(3), 33(1), 35(3), 43(1); SB.132(2); LB.161(1); TB.306(2); SH.324(1); AFR.842(1); TRA.102(3), 110(1); WCD.8(3); FAL.57(p), 103(p), 106(p), 145(1), 149(5), 171(1), 184(1), 216(2); MB.9(1), 13(1), 16(1), 53(2), 67(3), 77(1), 86(1); LIZ.29(3).

### *Trypanosyllis prampramensis* Augener 1918

*Trypanosyllis prampramensis* Augener 1918, p. 276, pl. 4, figs. 91, 92, text-fig. 26. Day 1953, p. 414.

*Records:* FAL.156(1).

### *Trapanosyllis ankyloseta* n. sp.

(Fig. 7 *b–e*)

*Records:* FAL.216(1).

*Diagnosis:* A short broad body, dorsal cirri with 6–8 joints, simple setae with the blade fused to the shaft-head.

*Description:* The holotype is the single specimen dredged in False Bay at 32°12·4′S/18°43·5′E at a depth of 42 metres on a sand and rock bottom. The specimen (fig. 7*c*) is very broad and short and markedly flattened. It measures 8 mm. by 1·8 mm. and is roughly oval with about 120 segments. The colour is yellowish white in alcohol.

The prostomium (fig. 7*d*) which is sunk in between the anterior segments, is rectangular with 4 large eyes, a pair of ovoid palps directed ventrally and 3 short antennae. The lateral pair are anterior in origin and have 6 joints while the median arises from the centre of the prostomium and has 8 joints. The tentacular cirri are borne on anteriorly directed projections arising between the prostomium and the first pair of parapodia and the tentacular segment is not visible dorsally. The dorsal pair of tentacular cirri are longer than the ventral pair and are about equal to the dorsal cirri of setiger 1. The mouth is ventral and the long pharynx is folded on itself in the dorso-ventral plane. The trepan has about 10 teeth. The proventriculus which has about 40–50 rows of points extends from setiger 16–26.

Anterior segments increase in width until an average segment in the middle of the body is about 20 times as broad as long. Posterior ones decrease again as the body tapers to an oval anterior end. The parapodia (fig. 7*e*) are similar throughout. Each has a short dorsal cirrus of 6 to 8 joints borne on a broad projecting cirrophore. Below this is the setigerous lobe with a terminal papilla and below this again is the somewhat shorter ventral cirrus. The 4–5 setae (fig. 7*b*) are not compound but simple since the falcate unidentate blade has become fused to the shaft-head. The posterior end tapers to a bilobed pygidium bearing a pair of ovoid anal cirri with 3–4 joints.

### *Odontosyllis polycera* (Schmarda) 1861

*Odontosyllis polycera*. Augener 1918, p. 283, pl. 5, fig. 97. Day 1953, p. 415.

*Records:* LAM.31(2); FAL.23(p), 31(1), 50(3), 82(2), 104(p), 113(2), 164(1), 365(1); MB.57(2), 87(4).

### *Odontosyllis ctenostoma* Claparede 1863

*Odontosyllis ctenostoma*. Fauvel 1923, p. 277, fig. 104 *f–l*.

*Records:* TRA.121(1).

*Notes:* This species has been recorded from Angola by Augener (1918) but this is the first record for South Africa.

### *Pharnygeovalvata natalensis* Day 1951

*Pharyngeovalvata natalensis* Day 1951, p. 26, fig. 4 *e–j*.

*Records:* FAL.171(1).

*Notes:* The single specimen is incomplete but measured 9 mm. for 48 segments and is thus larger than the type. It has a general resemblance to *Odontosyllis ctenostoma* but the structure of the pharynx is characteristic.

### *Amblyosyllis lineolata* (Costa) 1864

*Pterosyllis formosa* Clap. Fauvel 1923, p. 280, fig. 105 *h–n*.
*Amblyosyllis lineolata* Day 1953, p. 415.

*Records:* FAL.136(2), 159(1), 162(1), 171(1).

### *Pionosyllis ehlersiaeformis* Augener 1913

*Pionosyllis ehlersiaeformis* Augener 1913, p. 225, pl. 3, fig. 32; text-fig. 31 *a–e*.
non *Pionosyllis ehlersiaeformis* Day 1953, p. 415, fig. 3*d*.

*Records:* WCD.13(8); FAL.269(4).

*Notes:* The material consists of four ovigerous females 4–8 mm. long living in mucus tubes attached to hydroids. Two of them had developing embryos on their backs.

The prostomium bears 3 antennae on its anterior margin and the median, which is the longest, is twice the length of the prostomium. There are 4 large eyes and broad palps which are united basally and bent ventrally. The tentacular segment is short and distinct from the prostomium. It bears two pairs of tentacular cirri, the longer dorsal pair being equal to the median antennae.

The dorsal cirri are smooth and tapered. The pair on the first setiger are about 1·5 times the breadth of the body but succeeding ones are shorter and over most of the body the dorsal cirri are only two-thirds the breadth of the body. Some of the cirri are wrinkled but none are annulated.

There are 10–12 setae per foot. Those of the first foot are stouter than the rest and at certain angles the blade almost appears fused to the shaft but in the following feet the majority of the setae are clearly compound with bidentate blades. A single slightly curved, simple needle-like seta appears on the 10th foot and a little later two *Ehlersia-type* compound setae with very long slender blades. Beneath these are several compound setae with shorter blades with two large terminal teeth. An inferior simple seta was not seen but in two specimens natatory setae with immensely long blades were found in posterior feet.

Augener's descriptions of the dorsal cirri are not quite consistent for in the first account (Augener 1913) he states that the dorsal cirri are not ringed and in the second (Augener 1918) he says that they are.

The tendency for transverse wrinkling or indistinct ringing is common in the genus and it is possible that the different descriptions are due to variations in methods of preservation.

Augener (1918) suggested that *P. malmgreni* described by McIntosh (1904) from False Bay as having 20–30 annulations to the dorsal cirri was synonymous with his *P. ehlersiaeformis*. In Day (1953) I followed Augener but noted that my specimen did not have true *Ehlersia*-type setae. I now feel that they should be kept separate for the Cape form of *P. malmgreni* lacks the *Ehlersia*-type superior setae, has 20–30 indistinct joints to the dorsal cirri and grows to a much larger size (40 mm. as against 8 mm.).

### *Pionosyllis cf. longocirrata* St. Joseph 1887

*Pionosyllis cf. longocirrata*. Fauvel 1923, p. 288, fig. 110 *h–l*.
*Pionosyllis sp.* Day 1953, p. 418, figs. 3 *e–f*.

*Records:* SH.204(2), 415(1).

*Notes:* These specimens show many similarities to Fauvel's description but the identification remains uncertain. All three individuals are soft and fragile and have broken in several places but might measure 15 mm. if complete. The prostomium has 2 pairs of eyes and the anterior pair are larger and further apart. The palps are fused at their bases and bent ventrally. The pharynx is short with a smooth rim and a fairly large anterior tooth. The proventriculus

has about 30 rows of points. The dorsal cirri are very long, smooth, tapered and over twice the breadth of the stout body. The anterior ventral cirri are large and triangular but not lamellar and further back they become more digitiform. The setae are very long and fine. The blades themselves are slender, and not obviously tapered. The tips are bidentate and as shown in Day (1953) figs. 3 *e–f*, there is a strong hooked terminal tooth with a slender tooth directed obliquely towards it. There are also faint indications of a hood over the terminal tooth. No simple setae were seen.

The European *P. longocirrata* has even longer dorsal cirri, up to 4 times the body breadth but Fauvel's figure 110*h* does not suggest that they are tapered and his figure of the seta (110*l*) does not suggest a hooked terminal tooth.

### *Pionosyllis magnidens* Day 1953

*Pionosyllis magnidens* Day 1953, p. 416, fig. 3 *a–c*.

*Records:* FAL.132(2), 174(3), 178(1).

### *Grubea furcelligera* Augener 1913

*Grubea furcelligera* Augener 1913, p. 256, pl. 3, figs. 20, 21; text-figs. 39.

*Records:* FAL.275(2).

*Notes:* The material consists of two females with natatory setae carrying developing embryos on their backs. They are colourless in alcohol. The best preserved measures 5 mm. in length and has 40 segments. The prostomium is rounded with a pair of palps which are square in front, fused for most of their length but with the distal ends free. There are 3 antennae all arising from the anterior margin of the prostomium. All are bottle-shaped with tapered ends and the median is twice the length of the laterals which are equal to the width of the body (not including the parapodia) at the level of setiger 1. There are 4 eyes. The pharynx extends back to setiger 4 with the dorsal tooth near the anterior end. The barrel-shaped proventriculus extends over a further 2 segments.

The tentacular segment is clearly marked off from the prostomium but is very narrow and not very distinct from setiger 1. It bears the usual 2 pairs of tentacular cirri, of the same elongate subulate shape as the antennae. The dorsal pair which is twice as long as the ventral pair is equal to the median antenna. The dorsal cirri are similar to the antennae and the tentacular cirri but vary in length; the dorsal cirri of setiger 1 are $\frac{3}{4}$ the length of the antennae, those of setiger 2 are very short and hardly exceed the length of the setigerous lobe, those of setigers 3 and 4 increase again and the dorsal cirri of setigers 5 and subsequent segments are about half as long as the tentacular cirri or a little over half the width of the segment that bears them. The setigerous lobes are short truncate cones and the ventral cirri are rather stout and ovoid.

The normal compound setae have swollen shaft-heads and very small, unidentate dagger-like blades. There is also a single pointed simple seta in the

superior part of each bundle. The natatory setae appear in setiger 9. Each has a long slender shaft from which arises a very fine hair-like tapered blade.

This South African material lacks the small anterior third pair of eyes described by Augener and the antennae, tentacular cirri and dorsal cirri of setiger 1 are considerably longer than Augener describes, possibly due to differences in preservation. This is a new record for South Africa.

### *Grubea rhopalophora* Ehlers 1897

*Grubea rhopalophora* Ehlers 1897, p. 53, pl. 3, figs. 66–70. Augener 1918, p. 295, pl. 4, fig. 94.

*Records:* FAL.17(1), 246(2); MB.85(1).

*Notes:* The Cape material agrees perfectly with Ehler's description and I can confirm that the compound setae are unidentate. This species has previously been recorded by Augener (1918) from the shore at Swakopmund and shallow dredgings at Lüderitzbucht in South West Africa. In his notes on individuals from Lüderitzbucht Augener describes two with minute and truncate dorsal cirri containing fibrillar structures. These agree very closely with the description of Fauvel (1923) of *Grubea pusilla* (Dujardin).

*Grubea rhopalophora* is generally similar to *G. limbata* Claparède but differs in the fact that the antennae, and dorsal cirri are shorter with more swollen bases, the tentacular segment is more completely fused with the prostomium and the palps separate towards their extremities.

### *Sphaerosyllis sublaevis* Ehlers 1913

*Sphaerosyllis sublaevis* Ehlers 1913, p. 482, pl. 32, figs. 10–15.

*Records:* SB.167(1); FAL.82(1); TRA.113(1).

*Notes:* These specimens agree very well with Ehlers' description. The body surface is smooth and there is no dorsal cirrus on setiger 2. The antennae, tentacular cirri and anterior dorsal cirri are all small and flask-shaped with swollen bases and tapered ends but further back the dorsal cirri become longer and more bottle-shaped. The setae have unidentate blades. Ehlers states that there is a third minute pair of eyes on the anterior margin of the prostomium. Their absence in the present specimens is not regarded as important as it has been noted that such eye-specks are often invisible in individual specimens of Syllids.

*S. sublaevis* is close to *S. claparedii* Ehlers (1864) but the latter is reported to have a dorsal cirrus on setiger 2.

### *Sphaerosyllis hystrix* Clap. var. *capensis* Day 1953

*Sphaerosyllis hystrix* Day 1953, p. 420, fig. 4 *g–l.*

*Records:* SB.183(2).

### *Exogone clavator* Ehlers 1913

*Exogone clavator* Ehlers 1913, p. 485, pl. 33, figs. 1–6. Day 1953, p. 418.

*Records:* WCD.5(1); SB.183(4); FAL.17(7), 110(1), 131(6), 152(1), 159(2), 266(1); MB.57(1); LIZ.29(1).

### *Exogone gemmifera* (Pagenstecher) 1862

*Exogone gemmifera*. Fauvel 1923, p. 305, fig. 117 *a–d*.
*Exogone verugera* (non Claparède) Day 1953, p. 418.

*Records:* SB.167(2); FAL.22(7), 82(2), 103(3), 128(1), 178(10), 280(1).

*Notes:* In 1953 I referred several specimens to *E. verugera* though it was noted that they lacked a dorsal cirrus on setiger 2. Examination of a great deal more material from both South Africa and Europe and the discovery of the typical *E. verugera* in South Africa has shown that the presence or absence of a dorsal cirrus on setiger 2 is a constant and important character. It is now possible to summarize the main differences between the three closely related species *E. verugera*, *E. gemmifera* and *E. heterosetosa*, all of which occur in the Southern hemisphere.

In *E. gemmifera* the palps are short and broad, the three antennae are of equal size and about the same length as, or a little longer than, the prostomium. The proventriculus is short, extending over 1–2 segments, and has 10–12 rows of points. The superior compound seta has a long dagger-like blade. There is no dorsal cirrus on setiger 2. In *E. heterosetosa* the palps are short and the three antennae are about the same length as the prostomium. The proventriculus is rather long, extending over 3 segments and has 15 or more rows of points. The superior compound seta has a characteristically swollen shafthead and a short broad blade. There is no dorsal cirrus on setiger 2. In *E. verugera* the palps are rather long and tapered and the three antennae are equally minute and much shorter than the prostomium. The proventriculus is fairly long, extending over 2–3 segments and has 25–30 rows of points. The superior seta has a dagger-like blade. There is a dorsal cirrus on setiger 2.

### *Exogone verugera* Claparède 1868

*Exogone verugera*. Fauvel 1923, p. 307, fig. 117, figs. *m–r*.

*Records:* SH.400(1); FAL.162(13); SCE.54(1).

*Notes:* The diagnostic characters of this species are given above.

### *Autolytus charcoti* Gravier 1906

*Autolytus charcoti* Gravier 1906, p. 7, pl. 1, figs. 1, 2.
?*Autolytus afer* Ehlers, 1908b, p. 46.

*Records:* TB.312(1); FAL.247(1); LIZ.29(1).

*Notes:* Specimen TB.312 measures 15 mm. for 75 segments. The body has conspicuous black bands at the intersegmental junctions starting at setiger 1/2 then every junction to setiger 6/7, then misses 7/8 and 14/15 and thereafter is present on every fourth junction to the end of the body. On specimen LIZ.29 every intersegmental junction from 2/3 onwards is banded.

Diverging nuchal epaulettes extend from the back of the prostomium to setiger 2. The trepan has 10 equal teeth. The antennae, tentacular cirri and the dorsal cirri of setiger 1 are stout and just longer than the width of the body, but thereafter the dorsal cirri decrease and in the middle of the body they are rather less than one-third the body width.

The specimen described by Ehlers (1908) from Lüderitzbucht as *A. afer* agrees in general characters, but as it was preserved in osmic acid no details of colour pattern are available.

### *Autolytus tuberculatus* (Schmarda) 1861

*Autolytus tuberculatus*. Augener 1918, p. 307. Day 1953, p. 421.

*Records:* FAL.22(1), 82(7), 103(3), 113(1), 122(1), 145(1), 159(1), 162(1), 171(2), 247(1), 280(5); ?LIZ.58(1).

*Notes:* Further material has shown that the length of the nuchal epaulettes is variable. They may reach setiger 6 or hardly reach setiger 4. Anterior dorsal cirri are unequal; those of setigers 1, 2, 4 and 6 are much longer than those of setigers 3, 5 and 7 or subsequent segments. In the middle of the body they are only one-third to one-half of the width of the body.

### *Autolytus prolifer* (Müller) 1788

*Autolytus prolifer*. Fauvel 1923, p. 311, fig. 119.

*Records:* FAL.334(1); MB.58(1), 69(1); SCD.40(1).

*Notes:* The pharynx is S-shaped and crowned with 10 large triangular teeth. Indistinct nuchal epaulettes are present on setiger 1 but do not extend on to setiger 2. The antennae, tentacular cirri and dorsal cirri of the first setigers are long but the remaining ones are only one-third to one-quarter the width of the body.

### *Autolytus maclearanus* McIntosh 1885

*Autolytus maclearanus*. Ehlers 1913, p. 488, pl. 33, figs. 9–11.
*Autolytus inermis* (non St. Joseph) Ehlers 1913, p. 488.

*Records:* SH.430(20); FAL.43(1); SCD.61(3).

*Notes:* This South African material agrees very well with the species described by Ehlers from Kerguelen under the name of *A. maclearanus*. McIntosh's original description is so vague that it might refer to any species of *Autolytus*, but Ehlers's description and figures are clear.

The diagnostic features are the long antennae, dorsal tentacular cirri and dorsal cirri of setiger 1. All of these greatly exceed the width of the body and are often so wrinkled as to give the impression of being annulated which they are not. The dorsal cirri of normal body segments are about one-third of the body width. The tentacular segment is much shorter than setiger 1 and on some specimens it has vague indications of small nuchal epaulettes as stated by Ehlers. The pharynx has 6 rounded lappets instead of sharp chitinous teeth at its entrance. These were only seen when the pharyngeal sheath was dissected away and the pharynx was first thought to be unarmed as in *A. inermis*. The latter species, however, has a doubly convoluted pharynx while the present species has a single large loop.

Ehlers stated that the proventriculus of his Kerguelen specimen lay in the 7th segment. Here it is in the 4th and has 30 rows of points. In fresh material it is faintly greenish.

### *Myrianida phyllocera* Augener 1918

*Myrianida phyllocera* Augener 1918, p. 301, pl. 4 figs. 87–89, text-fig. 30. Day 1953, p. 421.

*Records:* FAL.178(1); LIZ.2(1).

### *Lamellisyllis* gen. nov.

Prostomium with 3 lamellar antennae. Palps united at their bases. Pharynx straight with an anterior dorsal tooth. Prominent nuchal epaulettes. A single pair of cylindrical tentacular cirri. Dorsal cirri lamellar, setae compound, ventral cirri on all segments. Type species *L. comans*.

### *Lamellisyllis comans* n. sp.

(Fig. 7 *f–i*)

*Records:* FAL.110(1).

*Description:* The holotype is a pale, flattened worm, roughly *Harmothoid* in outline and measures 8 mm. for 50 segments. The prostomium is sunk back between the anterior segments which project forwards and outwards so that the front end of the body (fig. 7*f*) appears rounded. The palps are normal and united only at their bases. The small rounded prostomium (fig. 7*g*) has 4 eyes set in a rectangle and 3 subequal foliaceous antennae. The lateral pair arise from the anterior margin while the median arises from the centre of the prostomium. The mouth is ventral and the straight, weakly chitinized pharynx bears a single dorsal tooth near its anterior margin. It extends back to setiger 7 and the barrel-shaped proventriculus with 20 rows of points extends on to setiger 12.

Two grooved, finger-like nuchal organs diverge from the posterior margin of the prostomium towards the sides of setiger 3. They were first thought to lie freely on the dorsum but attempts to move them showed that they are

attached throughout their length. A single pair of tapered and cylindrical tentacular cirri project forwards on either side of the prostomium. This pair corresponds to the ventral cirri of a normal segment for each arises from a lobe of the tentacular segment which is wedged between the prostomium and the first setiger and above it there is a lump which seems to correspond to a dorsal cirrophore.

The normal body segments (fig. 7*h*) are all similar. Each is about 20 times as broad as long and has a dorsal cirrus, a setigerous lobe and a ventral cirrus on its lateral margin. The dorsal cirrus is borne on a stumpy cirrophore placed well above the setigerous lobe and the cirrus itself is flattened, oval to circular in outline, and is attached to the cirrophore by its edge. Alternate dorsal cirri are more medial and more lateral in origin. The setigerous lobe is an obliquely truncate cone with a minute papilla at its apex. There is a pointed aciculum and about 20 compound setae (fig. 7*i*) whose blades are strongly bidentate and 'hairy'. The ventral cirrus is conical and slightly shorter than the setigerous lobe. The posterior end of the worm is markedly tapered and the pygidial segment bears a pair of foliaceous anal cirri.

The possession of foliaceous appendages is unusual in the family Syllidae. The genus *Myrianida* has flattened head appendages and dorsal cirri but the completely fused palps, the sinuous pharynx crowned with a trepan of teeth, the minutely-bladed compound setae and lack of ventral cirri immediately place it in the sub-family *Autolytinae*. *Phyllosyllis* Ehlers (1897) from South Georgia obviously belongs to the *Autolytinae* as well although it has setae on the tentacular segment. Knox (1957) has recently described *Clavisyllis* from New Zealand with inflated, ovoid dorsal cirri, normal ventral cirri, large nuchal epaulettes, palps united only at their bases and a straight pharynx with an anterior tooth. In these characters it is very similar to the present *Lamellisyllis*, but it differs in having cylindrical antennae, a nuchal cirrus between the nuchal epaulettes and two pairs of tentacular cirri. Possibly *Clavisyllis* should be included in the sub-family *Eusyllinae*. *Lamellisyllis* with its single pair of tentacular cirri shows resemblances to *Sphaerosyllis*, *Exogone* and *Spermosyllis* all of which belong to the sub-family *Exogoninae*. But all the members of the latter sub-family, have palps which are fused throughout their length so it might be better to place *Lamellisyllis* in a sub-family of its own.

The characters of *Clavisyllis* and *Lamellisyllis* show that the family *Syllidae* is closer to the family *Phyllodocidae* than had previously been realized.

### *Procerastea perrieri* Gravier 1900

*Procerastea perrieri*. Fauvel 1923, p. 327, fig. 126 *a–c*.

*Records:* SH.430(4); SB.167(LC).

*Notes:* This is a new record for South Africa but the specimens agree perfectly with Fauvel's description. This species seems to feed on hydroids growing just below low-tide mark.

## Family *NEREIDAE*

### *Laeonereis ankyloseta* Day 1957

*Laeonereis ankyloseta* Day 1957, p. 83, fig. 5 *a–j*.

*Records:* FB.302(3), 307(6); FAL.8(1), 43(1), 50(1), 80(p), 110(2), 126(1), 171(1), 225(4), 249(1), 275(1), 304(1), 345(1); MB.13(1), 16(1), 40(1), 56(heteronereid), 62(1 juvenile), 86(1), 87(1), 88(3); LIZ.1(1), 9(1); SCD. 32(3), 54(2).

*Notes:* MB.62 is a juvenile which lacks the characteristic ankylosed setae but the other characters are typical. MB.56 is a heteronereid.

### *Nereis* (*Neanthes*) *operta* Stimpson 1855

*Nereis* (*Neanthes*) *operta*. Day 1934, p. 38, fig. 5. Day 1951, p. 28. Day 1953, p. 424.

*Records:* LAM.4(1), 8(1), 16(1), 22(2), 25(1), 44(1), 51(1), 59(1), 61(1), 63(1); SB.118(1), 175(2), 179(1), 181(1), 189(15); SH.366(1), 428(1), TB. 302(1), 325(1), WCD.23(1); TRA.69(2 planktonic heteronereids), False Bay: 24 records from 2–38 metres on sand and rock. MB.49(1), 62(1), 87(6), 88(1); LIZ.6(6).

### *Nereis* (*Neanthes*) *willeyi* Day 1934

*Nereis* (*Neanthes*) *willeyi* Day 1934, p. 38, fig. 6 *a–c*. Day 1951, p. 28. Day 1953, p. 424.

*Records:* False Bay: 22 records from 0–22 metres on sandy rocks. MB.40(4), 49(1), 59(1), ?71(1).

### *Nereis* (*Neanthes*) cf. *kerguelensis* McIntosh 1885

*Nereis kerguelensis*. Ehlers 1897, p. 65, pl. 4, figs. 81–93.

*Records:* AFR.950(1); 994(1); TRA.143(1).

*Notes:* The largest of the three specimens measures 22 mm. It is pale brown in alcohol with a more intense bar across setiger 2. The proboscis has group I = 0; II = a wedge of 8–9 points; III = 5–6; IV = a wedge of 10 points; V = 0; VI = 2–5 in a close set group; VII and VIII = a single row of 3–5. Anterior feet have three notopodial lobes and a rather longer dorsal cirrus. In posterior feet there are only two notopodial lobes. There are no notopodial falcigers. The neuropodial falcigers have straight blades with a tendon towards the tip. This South African material differs from published descriptions of *N. keurguelensis* in having more denticles on group VI. In this and in the brown bar on setiger 2 it resembles *N. unifasciata* Willey but the latter only has two notopodial lobes on anterior feet.

### *Nereis* (*Neanthes*) *succinea* Frey & Lueckart 1847

*Nereis glandulosa* Ehlers 1908a, p. 74, pl. 8, figs. 1–6.

*Records:* TRA.91(3); LIZ.1(7), 3(10), 38(1).

### *Nereis* (*Nereis*) *lamellosa* Ehlers 1868

*Nereis lamellosa* Ehlers 1868, p. 564, pl. 22, figs. 10–17. Fauvel 1936, p. 36.

*Records:* TRA.33(3), 91(1); FB.306(6); FAL.184(1), 187(1), 206(1), 209(1), 223(4), 240(2); MB.4(3), 34(2), 75(2); SCD.20(1), 61(1), 94(3), 105(1).

*Notes:* As shown by Fauvel (1936) this species is very close to *N. succinea* but has dorsal homogomph falcigers in posterior feet. All neuropodial falcigers have feathered blades with a tendon from the apical tooth.

### *Nereis* (*Nereis*) *zonata var. persica* Fauvel 1911

*Neireis zonata* var. *persica* Fauvel 1911, p. 385, pl. 19, figs. 10–16, 18–23; pl. 20, figs. 24–25.

*Records:* SH.71(1); SCD.50(1), 63(1).

*Notes:* This species which is well known from the tropical Indian Ocean has been found as far south as Moçambique (Day 1957). The present records show that it extends even further south in dredgings off the eastern Cape Province. It has also been found on the hull of a ship visiting Table Bay from the Indian Ocean.

### *Nereis* (*Nereis*) *jacksoni* Kinberg 1866

*Nereis* (*Nereis*) *jacksoni*. Fauvel 1932, p. 97.

*Records:* LIZ.27(2); SCD.100(1).

### *Nereis* (*Nereis*) *falsa* Quatrefages 1865

*Nereis falsa*. Fauvel 1923, p. 337, fig. 129 *e–m*.
*Neries callaoana* (non Grube) Augener 1918, p. 174 (partim).

*Records:* SH.71(1).

*Notes:* The specimen is typical. Though known from the Natal coast it has not been recorded from the Cape. The present record is from the hull of a ship from India. Augener's 4 specimens from Swakopmund labelled *N. callaoana* (V.8782) were kindly sent to me by the Director of the Hamburg Museum. Three proved to be *N. falsa* and one *Platynereis dumerilii*.

### *Nereis* (*Nereis*) *eugeniae* (Kinberg) 1866

*Nereis eugeniae*. Ehlers 1897, p. 67, pl. 4, figs. 94–105. Monro 1936, p. 136.

*Records:* TRA.74(1), 80(3).

*Notes:* The anterior part of the prostomium is free from the bases of the palps; the eyes are small and the tentacles are short. The dental formula of the largest specimen is: I is 0; II is 3–4 in a line; III is 0; IV is 8–9 in a single to double row; V is 0; VI is a transverse group of 3; VII and VIII consist of 4

widely separated points in a single row. All paragnaths are minute and as shown they are not numerous in these small specimens.

Anterior feet have two dorsal lobes. In the posterior feet all lobes are pointed and the dorsal lobe is much larger than the rest. By contrast the dorsal cirrus is thin and delicate. Most posterior notopodia include 1–2 stout homogomph falcigers with very short conical blades hardly longer than the width of the shaft. Ventral falcigers of anterior feet have long straight blades; in posterior feet there are fewer but larger ones.

*Nicon eugeniae* was first described by Kinberg from a specimen collected off Argentina opposite the Rio de la Plata. Most workers however refer to the description given by Ehlers (1897) for *Nereis eugeniae* based on specimens collected in the Magellan area and compared with Kinberg's type. It is significant that neither author refers to homogomph falcigers in the posterior notopodia, and that Ehlers describes and figures the tentacular cirri of his specimen as being annulated and says that the tentacular cirri of Kinberg's specimen were '*gegen die Spitze hin deutlich gegliedert*'.

I have examined specimens in the British Museum identified by Monro (1930) and (1936) as *Nereis eugeniae*. None of these show annulated tentacular cirri and all have homogomph falcigers with short conical apices in the posterior notopodia. They are identical with my South African material. Kinberg's types must be examined before the identity of Monro's specimens and mine can be firmly established.

*N. eugeniae* is closely related to *N. trifasciata* Grube 1878 from the Phillipines. In the original description there was again no reference to homogomph falcigers in posterior notopodia but Augener (1922) who states that he was not able to see Grube's type, describes *N. trifasciata* from Juan Fernandez Island as having notopodial falcigers in posterior feet with long, almost straight blades some 4–5 times as long as the width of the shaft. Fauvel (1932) refers to similar setae in his description of material from the Indian Ocean. Here again the type must be examined before the naming is certain, but it will be obvious that the main difference between *N. eugeniae* (*sensu* Monro 1936) and *N. trifasciata* (*sensu* Augener 1922) lies in the structure of the notopodial falcigers.

*Nereis* (*Nereis*) sp.

(Fig. 8*a*)

*Records:* TRA.62(1).

*Notes:* The material consists of a single complete specimen 8 mm. long with 40 segments. The prostomium is broadly rounded in front and the palps are large with small palpostyles; the tentacles are normal and rather short. There are no colour markings. The dental formula is I = 1; II is a wedge of close-set points; III is a few scattered points; IV is like II; V = 0; VI is a rosette of 8–10 points; VII and VIII is a continuous band consisting of 2–3 irregular rows.

Anterior feet have two notopodial lobes. In posterior feet the superior notopodial lobe is enlarged and flattened and carries the cirrus at its apex; the inferior notopodial lobe is a slender cone.

Anterior notosetae are homogomph spinigers with short blades. Anterior neurosetae include homogomph spinigers with short blades and heterogomph spinigers. In middle feet there is a gradual change in the setae; the notopodial spinigers decrease in number and some of the neuropodial falcigers lose the articulation between shaft and blade. In posterior feet the notosetae include 2–3 homogomph falcigers with long straight blades and the neuropodial setae include 1–2 stout simple hooks (fig. 8*a*) formed by fusion of the straight pointed blade with the shaft, 2–3 normal heterogomph falcigers with fairly straight blades and 1–2 fine homogomph spinigers.

As far as I can ascertain no species with similar setae has been described but the single specimen is a juvenile of 8 mm. and for this reason is not named as a new species.

### *Nereis* (*Neanthes*) *caudata* (Delle Chiaje) 1841

?*Nereis cricognatha* Ehlers. Augener 1913, p. 163. Knox 1951, p. 217, pl. 45, figs. 6–8.
*Nereis* (*Neanthes*) *caudata*. Fauvel 1923, p. 347, fig. 135 *a–e*. Day 1953, p. 425.

*Records:* LB.161(1); SH.204(1), 366(1); MB.16(4).

*Notes:* After studying the descriptions of Augener (1913) and Knox (1951) I see no reason why *N. cricognatha* Ehlers (1905) from New Zealand should not be included in the synonymy of *N. caudata*.

### *Perinereis capensis* (Kinberg) 1865

*Perinereis capensis*. Monro 1933, p. 495, figs. 7–11. Day 1934, p. 42, figs. 8 *a–e*.

*Records:* SB.177 (1 juvenile); FAL.80(p), 122(p), 127(1), 159(2), 171(2), 174(1), 245(1); MB.9(1), 13(1), 16(2), 20(2), 40(4), 49(21), 53(18), 56(2), 62(1), 67(2), 74(2), 78(1), 85(1); LIZ.1(1), 6(4), 18(fc), 27(4).

### *Pseudonereis variegata* (Grube) 1856

*Nereis* (*Mastigonereis*) *variegata* McIntosh 1904, p. 37, pl. 1, figs. 6–10.

*Records:* FAL.126(1); TRA.69 (1 swimming in plankton).

*Notes:* This species which is so common between the tide marks has only been found on one occasion below low water.

### *Platynereis dumerilii* (Aud. and M.-E.) 1833

*Platynereis dumerilii*. Fauvel 1923, p. 359, fig. 141 *a–f*. Day 1953, p. 429.

*Records:* Lamberts Bay 14 records from 10-23 metres on rock (common); SB.114(c), 116(c), 122(p), 127(2), 129(3), 136(1), 180(8), 181(2), 183(3), 184(2), 194(4), 195(c); LB.155(c), 160(5), 161(4), 190(2), 380(4); SH.74(1);

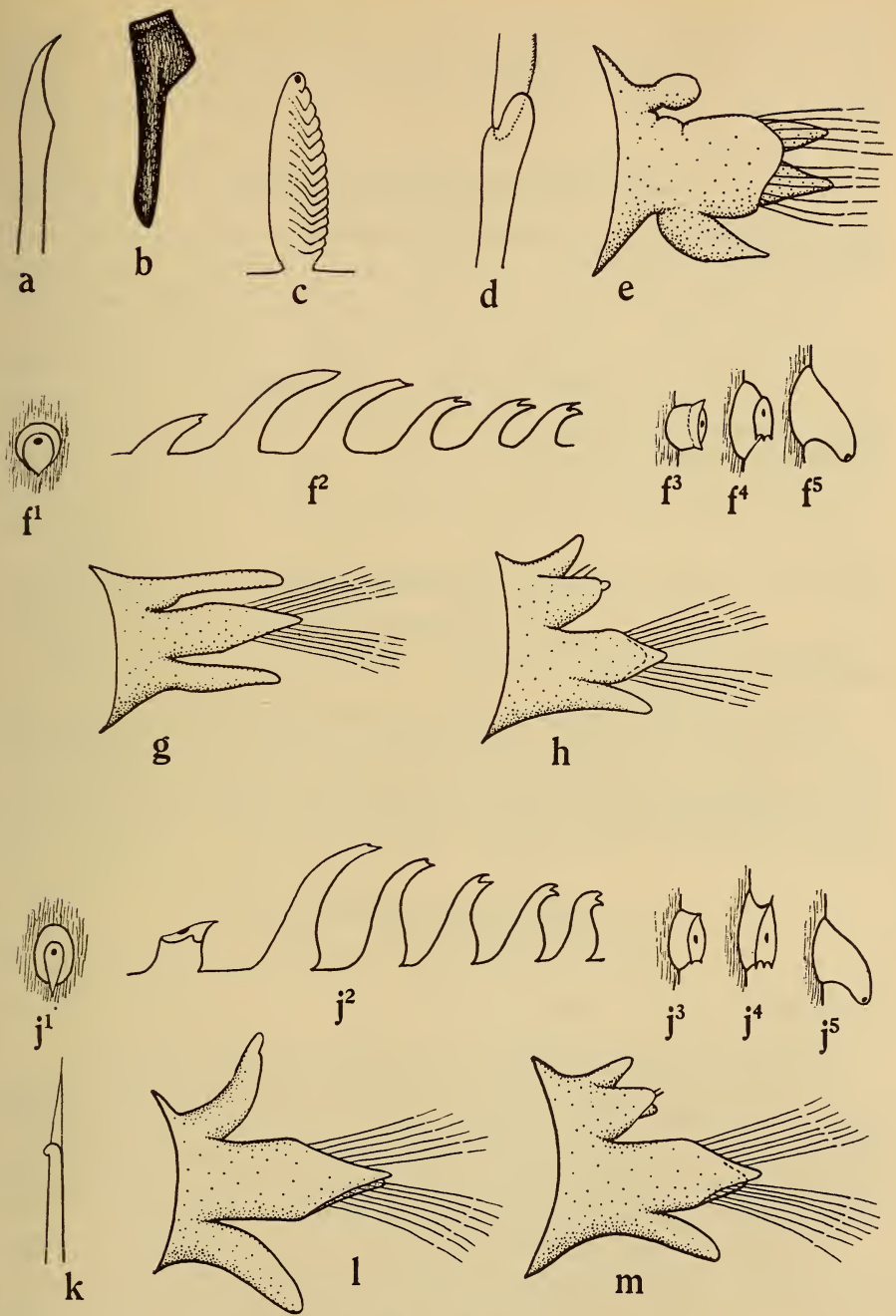


FIG. 8. *Nereis* sp.: *a* simple seta from posterior neuropodium.

*Glycera benguellana: b* jaw support; *c* papilla from proboscis; *d* head of compound seta; *e* posterior view of foot.

*Glycinde capensis: f*$^{1-5}$ proboscidial papillae (*f*$^{1}$ plan view of row *l*, *f*$^{2-5}$ lateral view of rows 2–5); *g* anterior view of anterior parapodium; *h* anterior view of posterior parapodium.

*Glycinde kameruniana: j*$^{1-5}$ proboscidial papillae (*j*$^{1}$ plan view of row, *l*, *j*$^{2-5}$ lateral view of rows 2–5); *k* notoseta of posterior foot; *l* anterior view of anterior foot; *m* anterior view of posterior foot.

TRA.69 (abundant in plankton); TRA.107(1); False Bay: 33 records from 0–36 metres on Algae or hydroids; (MB.4(1), 20(2), 27(4), 38(1), 40(6), 56(8), 59(1), 74(13), 86(2), 87(2); LIZ.1(2), 6(6), 13(1), 27(4); SCD.20(1).

*Platynereis australis* (Schmarda) 1861

*Platynereis magalhaensis* Kinberg. Fauvel 1916, p. 434, pl. 8, figs. 21, 22.
*Platynereis australis* Day 1953, p. 429.

*Records:* SB.130(7); LB.155(1), 472(3); SH.366(1); 415(1).

*Platynereis calodonta* Kinberg 1866

*Platynereis hewitti* Day 1934, p. 44, fig. 9 *a–f.*
*Platynereis calodonta* Day 1953, p. 429.

*Records:* FAL.134(1); MB.40(1); LIZ.6(1), 27(1).

## Family *SPHAERODORIDAE*

*Ephesia gracilis* Rathke 1843

*Ephesia gracilis.* Fauvel 1923, p. 377, fig. 148 *a–f.*

*Records:* LAM.8(2), 31(1), 54(1), 59(2); SB.119(1), 183(1); TB.305(1), 330(1); TRA.58(1), ?102(3), 143(2); FAL. 223(1), 371(1), SCD.54(1).

*Notes:* This is a new record for South Africa and the specimens have been checked as identical with European material.

## Family *NEPHTHYDIDAE*

*Nephthys (Nephthys) capensis* Day 1953

*Nephthys (Nephthys) capensis* Day 1953, p. 431, text fig. 5 *g–m.*

*Records:* LAM.52(3); LB.364(5); FAL.107(1), 209(1); TRA.104(1).

*Notes:* In these larger dredged specimens the gills are often cirriform throughout so that there is a strong superficial resemblance to *N. hombergi.* However, it lacks a bilobed presetal lamella having at most a rudimentary presetal lamella in the notopodium, and always has short, saw-edged geniculate setae in the posterior row as well as the usual elongate capillaries.

This species is close to *N. gravieri* Augener (1913) from Fremantle, and may indeed be identical. However, Augener's figures of the anterior setae, the shape of the parapodial lamellae and the gill suggest that there are important differences. Moreover, he only mentions two types of setae and gives the impression that there are only saw-edged geniculate setae in the posterior row.

*Nephthys (Nephthys) ? paradoxa* Malmgren 1874

*Records:* AFR.1578(1).

*Notes:* The material consists of the anterior half of a large worm. The prostomium is pentagonal with 4 subequal antennae and a pair of colourless eyes. The proboscis has 22 rows of papillae with 5–6 papillae per row. The ventral cirrus of setiger 1 is a little shorter than the antennae and the dorsal cirrus shorter still. Branchiae first appear on setiger 9 as foliaceous organs but become stout and cirriform towards the end of the fragment.

In anterior feet the notopodium has an oval setigerous lobe, a rudimentary presetal lamella and a rounded posterior lamella a little larger than the setigerous lobe. The gill is flattened and bears a small dorsal cirrus. The neuropodium has a bluntly conical setigerous lobe, a rudimentary presetal lamella and a rounded postsetal lamella only slightly larger than the feet. The ventral cirrus is normal. Later feet are essentially similar with slightly more divergent and pointed rami.

Anterior setae are normal laddered capillaries and posterior setae are long and bear transverse bands of conical teeth. These are deciduous and where they have dropped off transverse marks are left.

More material is required before this determination can be confirmed.

*Nephthys (Nephthys) hombergii* Savigny 1818

*Nephthys hombergii.* Fauvel 1923, p. 367, fig. 143 *a–d.* Day 1953, p. 431.

*Records:* SB.184(3), 202(8), 203(13), 205(1); LB.300(c), 391(2); TRA. 85(1); TB.301(1); WCD.15(6), 19(3), 21(7), 23(1), 28(6); FAL.187(2), 341(5), SCD.25(1), 63(8), 109(1).

*Nephthys (Nephthys) tulearensis* Fauvel 1919

*Nephthys tulearensis* Fauvel 1919, p. 422, pl. 16, figs. 31–39.

*Records:* MB.81(1).

*Nephthys (Micronephthys) sphaerocirrata* Wesenberg-Lund 1949

*Nephthys sphaerocirrata* Wesenberg-Lund 1949, p. 294, figs. 24-26. Day 1953, p. 431.

*Records:* SB.175(1), 199(2), 202(4), 203(16), 205(2); LB.323(1); WCD. 15(16), 19(20), 21(38), 23(18), 26(14), 28(12); FB.316(2); FAL.229(1), 250(2), 328(3), 338(1), 352(3), 375(7), 376(3), 378(3); LIZ.25(2); SCD.82(2), 109(3).

*Nephthys (Aglaophamus) macroura* Schmarda 1861

*Aglaophamus macroura* Hartman 1950, p. 118.

*Records:* AFR.783(1); AFR.1578(1); SCD.9(4).

*Notes:* These specimens agree very well with Hartman's description with the exception that the branchiae start on setiger 2 not 3 or 4 as stated. It might

also be added that the presetal lamella (not described by Hartman) is bilobed. The lamella is well developed in the first few feet but soon becomes reduced. It disappears in the notopodia but in the neuropodia minute lobes persist above and below the setigerous lobe.

## Family *GLYCERIDAE*

### *Glycera convoluta* Keferstein 1862

*Glycera convoluta*. Fauvel 1923, p. 383, fig. 150 *h–n*.

*Records:* LAM.45(2), 49(1), 52(4); SB.125(8), 175(1), 177(14), 179(1), 183(1), 184(2), 189(6), 193(1); LB.158(6), 159(10), 160(2), 169(1), 239(5), 299(c), 300(c), 363(4), 364(6), 380(c), 382(c), 391(6), TB.301(1); AFR. 1224(1); TRA.77(c), 143(1); WCD.15(5), 19(4), 21(4), 23(5), 26(1), 28(9); FB.323(7), 330(1); FAL.58(1), 187(1), 205(1), 209(1), 219(1), 225(1), 226(1), 240(9), 241(1), 243(1), 338(1), 341(c), 345(3), 347(2), 376(1), 378(2); KNY. 61(1); LIZ.24(1).

### *Glycera alba* Müller 1788

*Glycera alba*. Fauvel 1923, p. 385, fig. 150.

*Records:* TRA.108(2).

*Notes:* The first gill is on setiger 33. I doubt very much whether this species is really separate from *G. convoluta*.

### *Glycera parashadi* Fauvel 1932

*Glycera parashadi* Fauvel 1932, p. 126, pl. 5, figs. 1–8. Day 1957, p. 86.

*Records:* FB.317(1); FAL.211(1), 245(1).

### *Glycera unicornis* Savigny 1818

*Glycera unicornis*. Fauvel 1923, p. 389, fig. 153 *e–i*. Day 1953, p. 430.

*Records:* AFR.935(1); TRA.27(1), 91(1); FB.323(3); FAL.117(1), 229(1), 341(1); LIZ.24(1); SCD.18(1).

### *Glycera papillosa* Grube 1857

*Glycera papillosa*. Kinberg 1857–1910, p. 58, pl. 21, fig. 3. Augener 1922, p. 203, text-fig. 9 *a–c*. ?*Glycera kerguelensis* McIntosh 1885, p. 344, pl. 35A, figs. 3-4.

*Records:* FB.307(1); MB.74(1); LIZ.25(3), 38(1).

*Notes:* The prostomium has about 8 rings; the proboscidial papillae include a few ovoid forms, but the majority are slenderly conical, being five times as long as the basal breadth; they are not ringed. The jaw supports are deeply forked, the shorter limb being almost half the length of the longer one. There are no gills. The superior presetal lobe is minute but the inferior presetal lobe

is large and pointed. There is a single, broadly rounded post-setal lobe which reaches the same height as the ventral cirrus.

This species has longer proboscidial papillae and a much smaller superior presetal lobe than *G. capitata.*

It has been suggested that *Glycera kerguelensis* McIntosh 1885 is identical with *G. papillosa* and as Augener (1922) says, the description and figures of the proboscidial papillae agree very well. The type now in the British Museum has had its head cut off but the remainder of the worm shows that the original was much larger than Augener's specimen or mine. In the feet the superior presetal lobe is much smaller than the inferior one but not quite so minute as in the present specimens. Otherwise the feet are very alike. *G. kerguelensis* is certainly much closer to *G. papillosa* (type locality Valparaiso, Chile) than it is to *G. capitata* (type locality Denmark).

### *Glycera benguellana* Augener 1931

(Fig. 8 *b–e*)

*Glycera capitata v. benguellana* Augener 1931, p. 303, text-fig. 9.

*Records:* LAM.26(2), 35(2), 40(2), 41(3), 49(1), 52(1); TB.304(1), 322(1); FAL.51(1), 63(1), 65(1), 206(1), 209(1), 233(3), 250(1); 349(1), 365(1), 378(1); MB.62(1); SCD.109(1).

*Notes:* The body is tapered at both ends, slightly swollen anteriorly and the segments are biannulate. The prostomium is very long with numerous (?30) indistinct rings. There are no visible eyes. The jaw supports (fig. 8*b*) have only one fork developed, the other limb being reduced to a mere expansion of the base. The proboscidial papillae include numerous elongate forms (fig. 8*c*) with 14–16 distinct V-shaped marks on one side and a few stout forms which are essentially similar in structure. The parapodium (fig. 8*e*) has a fairly large dorsal cirrus, two subequal presetal lobes, a single low rounded postsetal lobe and a broad pointed ventral cirrus. There are no gills.

As shown above this species is quite distinct from *G. capitata* in the shape of the jaw supports, proboscidial papillae and even the feet for the superior presetal lobe of *G. capitata* is distinctly smaller than the inferior one. Augener's record was from deep water off South West Africa but the present records show that it is common all round the Cape.

### *Glycera longipinnis* Grube 1878

*Glycera longipinnis.* Fauvel 1932, p. 125, pl. 4, figs. 11–14.

*Records:* FAL.211(1).

*Notes:* The prostomium has about 12 poorly marked rings and rather long terminal antennae. There are no visible eyes. The proboscidial papillae are elongate and conical but not ringed. Gills start on the 20th setiger as simple

filaments arising from the dorsal edge of the foot at the same level as the presetal lobes. The gill filament is longer than the presetal lobes. The dorsal cirri are relatively large and arise from the body wall well above the foot in anterior segments but just at the base of the foot in the posterior part of the body. There are two long presetal lobes with pointed ends, and the superior one is distinctly shorter than the inferior. There is only one low rounded postsetal lobe; the ventral cirrus is short and pointed.

This is a new record for South Africa.

### *Glycera rouxii* Aud. & M.-E. 1834

*Glycera sagittariae* McIntosh 1885, p. 346, pl. 42, fig. 8; pl. 22A, fig. 10.
*Glycera rouxii*. Fauvel 1923, p. 389, fig. 153 *a–c*.
*Glycera goesi* Malmgren, McIntosh 1925, p. 69.

*Records:* TRA.80(3), ?27(1); FAL.237(3).

*Notes:* The proboscidial papillae are simple blunt cones some of which show a trace of two rings. There are also a few spherical papillae. The jaw supports lack one prong of the complete Y shape. Branchiae start on the 18th foot as long, single, retractile filaments arising from the anterior face of the parapodium. There are two, unequal, pointed postsetal lobes, the superior being slightly longer.

An examination of the type of *Glycera sagittariae* McIntosh 1885 which is now in the British Museum shows that it has feet with single retractile gill filaments arising from the anterior face of the parapodium and that the postsetal lobes are triangular, the superior one slightly longer than the inferior. Both postsetal lobes are shorter than the presetal ones.

Fauvel (1932) has recorded *G. sagittariae* but his description and figures do not agree with the type specimen seen by me. Also McIntosh's pl. 42 fig. 8 shows no gill on the dorsal edge of the foot, and his remark that the gill arises 'from the upper and anterior part of the foot' agrees with his specimen. Hartman (1950) suggests that Fauvel's specimen is really a *G. tesselata*, but *G. tesselata* lacks gills. It differs in the proboscidial papillae from *G. alba* or *G. prashadi*. Hartman suggests that *G. sagittariae* McIntosh is *G. gigantea* but this is incorrect, since the latter has globular gills and rounded postsetal lobes.

### *Ophioglycera eximia* (Ehlers) 1900

*Goniada eximia* Ehlers, Monro 1936, p. 141, fig. 25 *a–j*.
*Ophioglycera eximia* Hartman 1950, p. 38.

*Records:* AFR.1579(1); FAL.233(1).

*Notes:* These specimens are identical with Monro's specimens in the British Museum. The largest specimen has 4–5 teeth on the macrognaths, 30 dorsal and 19 ventral micrognaths. Parapodia 1–57 are uniramous with a dorsal cirrus which is notched on the dorsal edge; at the 58th foot the dorsal cirrus is

accompanied by a smaller inferior lobe; on the 60th notosetae appear between these two lobes and on succeeding feet the inferior notopodial lobe grows larger and by the 70th the two lobes are equal in size.

This is a new record for South Africa.

### *Glycinde capensis* n. sp.
(Fig. 8*f–h*)

*Records:* FB.306(1), 316(2); FAL.209(2), 250(1), 375(1 juv.); MB.81 (1 juv.); SCD.61(1), 63(1), 82(1).

*Description:* The holotype is the largest of the six incomplete specimens from False Bay and comes from FB.306. It measures 40 mm. for 112 segments and is pale yellow in alcohol. The tapered prostomium is 8-ringed with 2 pairs of eyes and 4 minute terminal antennae. The basal pair of eyes is internal and the distal pair just below the terminal antennae, is external. The long proboscis is covered with the usual rows of papillae and is armed with a pair of ventral macrognaths each with 5 teeth and a dorsal ring of 24 micrognaths (one of the paratypes has only 15).

According to Hartman's formula the proboscidial papillae (fig. 8*f*) consist of 6 groups. Group I which lies along the median dorsal line is formed by a sparse double row of minute tubercles each with a single point (fig. 8*f*[1]). Group II (fig. 8*f*[2]) consists of 6 oblique rows of much larger tubercles running along the dorso-lateral surface. II*a* the (dorsalmost) is small and the apex of each tubercle ends in 2 points. II*b* and II*c* are the largest and each tubercle is curved with a single apical point. II*d*, *e* and *f* decrease in size and the apex of each ends in two points like the open beak of a bird. Group III (fig. 8*f*[3]) consists of a row of minute, oval tubercles each ending in double points. Group IV (fig. 8*f*[4]) is a row of slightly larger tubercles, each with a 3-pointed apex. Group V (fig. 8*f*[5]) is a row of large, soft, bluntly conical papillae each with a small pore at the apex. Group VI, as usual, is absent.

The anterior region of the body consists of 28 uniramous segments, each with a straplike dorsal cirrus (fig. 8*g*), a compressed and tapered setigerous lobe and a ventral cirrus similar in shape to the dorsal but a little shorter.

All along the length of the body there is a tendency for the parapodial lobes to become shorter and broader and for the ventral cirrus to be attached more distally. This is true both for the anterior as well as the posterior region. Moreover, the rudiment of what, in the posterior region behind segment 29 will become the notopodium becomes evident about the 20th segment as an inferior thickening and later expansion of the dorsal cirrus. The setigerous lobe consists of the fused presetal and postsetal lobes with the setae issuing as superior and inferior fans.

The posterior, biramous region starts at setiger 29. Here, as the notopodium develops, the dorsal cirrus becomes shorter and moves into a postero-dorsal

position while an anteroventral lobe grows out and soon reaches the same size. The notosetae issue from a slit between them. The neuropodium is homologous with, and essentially similar to, the setigerous lobe and ventral cirrus of the anterior region. A typical foot of the posterior region (fig. 8*h*) has a broadly triangular notopodium with a small flattened dorsal cirrus and a larger but still essentially triangular neuropodium with a ventral cirrus.

In the anterior region the setae are all compound with spinigerous blades. In the posterior region, the notosetae are 2–3 acicular setae with bluntly hooked ends protected by a spike-like guard. The neurosetae are similar to the setae of the anterior region.

The South African material is obviously close to *G. nordmanni* (Malmgren) and *G. wireni* Arwidsson. However both of these are northern forms, the type locality of the former being Norway and of the latter, the Behring Straits.

Moreover there are several small differences from both these species. *G. nordmanni* has 36–37 anterior segments and examination of several specimens of various sizes in the British Museum showed that this figure is surprisingly constant. *G. wireni* has 31 anterior segments, only a single pair of eyes at the base of the prostomium and few (17) micrognaths. It seems safer to distinguish the South African material as a separate species until more is known about the variation and distribution of these rather rare worms.

### *Glycinde kameruniana* Augener 1918

(Fig. 8 *j–m*)

*Glycinde kameruniana* Augener 1918, p. 398, pl. 4, fig. 93; pl. 7, fig. 211.

*Records:* FAL.237(1), 341(1), 375(1); SCD.109(4).

*Description:* As far as I am aware this species has not been recorded since Augener's original description of a 10 mm. ovigerous female from the Cameroons in tropical West Africa. Augener's description is very incomplete and his figures add nothing to the text. For this reason a full description of the South African specimen is given below.

The specimen dredged in False Bay is a complete, ovigerous female measuring 39 mm. with 100 segments. It is pale in alcohol.

The prostomium has 8 indistinct rings, 4 minute terminal antennae and a pair of eyes embedded in the basal ring. A distal pair of eyes is lacking. The proboscis has a pair of ventral macrognaths each with 4 teeth and a dorsal arc of 4 micrognaths. The papillae on the proboscis (figs. 8$j^{1-5}$) are of the usual type. Those of the mid-dorsal row (group I (fig. 8$j^1$) are minute oval tubercles with a single point. Group II (fig. 8$j^2$) is a dorsolateral band formed of 5 large falcate tubercles in oblique rows; II*a* is small, stout and has a single point; II*b* is very large, with a curved single-pointed tip; II*c* is similar but the tip is not so sharp and II*d* and *e* are progressively smaller and have two points curved like the open beak of a bird. Group III (fig. 8$j^3$) is a row of minute

tubercles each with 3 points. Group IV (fig. 8*j*[4]) is a row of slightly larger tubercles whose oblique tops have 3 points dorsally and a sort of prow ventrally. Group V (fig. 8*j*[5]) is as usual, a row of large soft papillae with faintly bilobed apices.

The anterior uniramous region consists of 21 segments. Each parapodium (fig. 8*l*) consists of a strap-like dorsal cirrus, a setigerous lobe with a single tapering presetal lobe, a similar, subequal postsetal lobe and a ventral cirrus essentially similar to the dorsal one. The first few parapodia (e.g. the 8th) have the dorsal cirrus as a simple strap but from about the 15th it becomes obvious that the inferior side of the cirrus is bulging so that such dorsal cirri could conceivably be described as having a notch below the tip.

In the posterior region the body is a little flatter and the biramous parapodia are relatively larger. The notopodium, formed as a ventral outgrowth from the dorsal cirrus, is at first a simple bilobed structure but further back the dorsal cirrus becomes relatively shorter and posterodorsal in position. The setigerous lobe itself develops a minute second lobe (see fig. 8*m*) The neuropodium remains essentially similar to the setigerous lobe of the anterior region but here it is evident that the presetal lobe is distinctly longer than the postsetal lobe.

The setae are of the usual types. In the notopodium there are usually 2 acicular setae (fig. 8*k*) with bluntly curved apices and pointed guards. The setae of the anterior region and those of posterior neuropodia are slender-bladed spinigers. I have not been able to see the detail given by Hartman (1950).

The above description agrees with Augener's brief account in regard to the number of anterior segments, setae, shape of parapodia and eyes. Of the micrognaths he says he was only able to see '*einige ganz feine schwarze Punktchen*'. . . . I take this to mean that there were only a few micrognaths. Augener gives no account of the proboscidial papillae.

*G. solitaria* (Webster) from the Atlantic coast of U.S.A. has been redescribed by Hartman (1950) and is obviously close to the present material. The number of anterior segments is a little larger (24), a distal pair of eyes is present and there are more micrognaths (10). On the other hand the papillae on the proboscis seem generally similar though groups IV and V are a little different. The parapodia are very alike. It is possible that further collecting on the tropical West African coast will show that *G. kameruniana* is a synonym of *G. solitaria*.

### *Goniada maculata* Oersted 1843

*Goniada maculata*. Fauvel 1923, p. 392, fig. 154 *a–g*. Hartman 1950, p. 20, pl. 1, figs. 7–8.

*Records:* WCD.5 (1 juv.), 26(1 juv.); TRA.110(1 juv.); FAL.240(3), 250(1), 352(1).

*Notes:* South African specimens are quite typical. The papillae on the proboscis are as figured by Hartman and the feet agree with Fauvel's figures. In juvenile specimens it was noted that while the number of micrognaths

remains 3–4 dorsally and 3–4 ventrally, the number of teeth on the macrognaths may be as low as 4; again the change in the parapodial structure occurs a little earlier, on the 35th as against the 39–41st foot as usually quoted. Specimens of all sizes lacked eyes and from the 30th foot on, where there are two fingerlike presetal lobes to the neuropodium, the superior one is always a little longer than the inferior one.

## Family *EUNICIDAE*

### Subfamily Eunicinae

### *Eunice vittata* (Delle Chiaje) 1828

*Eunice vittata*. Fauvel 1923, p. 404, fig. 158 *h–n*. Day 1953, p. 433.

*Records:* AFR.691(p), 801(p), 994(p); TRA.56(p), 58(p), 71(a), 152(p); FB.302(1); FAL.26(1), 29(1), 184(1), 223(2), 243(1), 328(3), 334(7), 338(1), 341(1); MB.9(2), 67(4), 78(1); LIZ.18(4); SCD.22(1), 82(1), 99(3), 100(4), 109(3).

### *Eunice floridana* (Pourtales) 1869

*Eunice floridana*. Fauvel 1923, p. 402, fig. 157 *a–g*.

*Records:* AFR.761(1), ?773(1), 775(1).

### *Eunice pennata* (Müller) 1776

*Eunice antarctica* Baird 1869.
*Eunice savignyi* (non Grube) Ehlers 1908a, p. 88, pl. 11, figs. 7–13. Hartman 1956, p. 283.
*Eunice pennata*. Fauvel 1923, p. 400, fig. 156 *h–o*. Monro 1930, p. 118, fig. 42.
*Leodice langi* Treadwell 1943, p. 3, figs. 14–18.

*Records:* AFR.691(1), 707(1); TRA.115(1); FAL.375(2).

*Notes:* Baird's type of *Eunice antarctica* from 'Antarctic seas' which is in the British Museum has been compared with *E. pennata* from Europe identified by Fauvel and *E. pennata* from Tristan de Cunha identified by Monro (1930) and the present material from South Africa. All are identical. Baird states that in *E. antarctica* the gills start on the 8th foot, but examination of the type shows that there are small single filaments from the third foot. *E. pennata* has fairly short tentacles with faintly marked annulations towards the tip. It is close to *E. savignyi* Grube from the Philippines but the latter is a tropical shallow water species with distinctly jointed or even moniliform tentacles. Moreover in *E. savignyi* the median tentacle is very long and reaches the 16th setiger whereas in *E. pennata* it only reaches the 3rd to 8th foot. Ehlers's record of *E. savignyi* from the Agulhas Bank obviously refers to *E. pennata*.

By the courtesy of the U.S. National Museum I was able to examine Treadwell's type of *Leodice langi* collected by H. Lang from 160 fathoms off Cape Town. The material, Ref. No. A6099, consists of a single specimen from which the jaws have been removed. The gills begin on the 3rd setiger as simple filaments, reach a maximum of 8 filaments on the 15th foot and end on

the 37th foot. The setae also agree with those of *Eunice pennata*. Hartman (1956) has referred Treadwell's *Leodice langi* to *E. savignyi* following Ehlers's record as cited in Fauvel (1932).

*Eunice aphroditois* (Pallas) 1788

*Eunice rousseaui* Quatrefages, Fauvel 1923, p. 403, fig. 158 *a–g*.
*Eunice aphroditois* Day 1943, p. 432.

*Records:* LB.157(2), 161(1), 299(c); FAL.51(1), 159(1); LIZ.35(1).

*Eunice australis* Quatrefages 1865

*Eunice australis*. Fauvel 1932, p. 139. Day 1953, p. 432.

*Records:* TRA.135(5), 152(p); FAL.30(1), 302(1), 334(2); MB.49(1), 67(1); LIZ.18(1); SCD.9(1), 32(2), 40(4), 54(3), 58(1), 89(9).

*Marphysa sanguinea* (Montagu) 1815

*Marphysa sanguinea*. Fauvel 1923, p. 408, fig. 161 *a–h*.

*Records:* LB.299(fc).

*Marphysa capensis* (Schmarda) 1861

*Marphysa capensis*. Augener 1918, p. 332, text-fig. 33.

*Records:* TB.318(4).

*Marphysa depressa* (Schmarda) 1861

*Marphysa depressa*. Day 1953, p. 434, fig. 5 *n, p*.

*Records:* LB.299(fc), SCD.63(1).

*Marphysa purcellana* Willey 1904

*Marphysa purcellana* Willey 1904, p. 263, pl. 13, fig. 17. Day 1953, p. 435.

*Records:* FAL.219(1), 223(1); MB.20(1); LIZ.18(1); SCD.58(1).

*Notes:* This is the second record of this rare species. The head and anterior segments are reddish brown and the falcigerous setae have long blades.

*Marphysa* sp.

*Records:* LIZ.35(1).

*Notes:* A single specimen of *Marphysa* which is new to South Africa was dredged in Algoa Bay (LIZ.35.T). It is 20 mm. long by 0·6 mm. with about 100 segments. The tail end is missing. This small, slender worm may be a juvenile and for this reason is not described as a new species.

The diagnostic characters are as follows: Prostomium bilobed, eyes present, antennae faintly annulated, a little longer than the prostomium. Gills appear far back (approximately the 60th setiger) and never develop more than a single filament. Setae include superior capillaries and inferior bidentate falcigers in all feet. Posterior feet have in addition comb-setae with about 12 teeth and bidentate acicular setae with guards. The acicula are bluntly pointed and all setae and acicula are pale.

*Lysdice natalensis* (Kinberg) 1865

*Lysidice capensis* Grube, McIntosh 1905, p. 40, pl. 3, fig. 13.
*Lysidice natalensis* Day 1951, p. 40. Day 1953, p. 435.

*Records:* AFR.967(1); FAL.16(4), 21(p), 44(3), 80(p), 113(p), 122(p), 126(1), 134(1), 156(2), 219(1), 269(1), 371(1); MB.49(1), 56(2), 67(1), 78(1); LIZ.6(1), 18(1), 27(1); SCD.89(1).

Subfamily Onuphidinae

*Onuphis emerita* Aud. & M.-E. 1834

*Onuphis emerita.* Fauvel 1923, p. 415, fig. 163. Monro 1930, p. 128, fig. 47.

*Records:* TRA.41(3); FB.321(3); FAL.205(2), 211(1), 228(2), 238(7), 242(4), 341(3), 352(2); MB.67(1), 81(1); LIZ.19(1), 24(1), 31(2 juvs.); SCD.96(1).

*Notes:* The specimens recorded above vary from juveniles of 25 mm. (LIZ.31) to well-grown individuals of 75 mm. They agree very well with Fauvel's description. Some individuals are pale but others have well-developed brown pigment pattern identical with that on preserved specimens from Naples now in the British Museum.

This species was first described from South Africa by Monro (1930) but his account is slightly inaccurate. I have checked his specimen from False Bay (British Museum No. 1930.10.8.1792) and find that the 'little conical tubercle' which he states is restricted to the first 3 or 4 setigers is actually the setigerous lobe. The structure which Fauvel 1923, p. 415 and fig. 163. *C*, calls '*un petit tubercle conique entre le mamelon sétigère et la base du cirre dorsal*' is a superior projection of the presetal lobe. This is well marked on the 5th–10th foot on a 100 mm. specimen from Naples but is not present on the smaller 23 mm. specimen described by Monro nor on the present material.

*Onuphis* (*Nothria*) *holobranchiata* Marenzeller 1879

*Onuphis* (*Nothria*) *holobranchiata.* Izuka 1912, p. 106, pl. 11, figs. 10–12.

*Records:* LAM.11(5), 26(5), 35(2), 39(c), 40(2), 41(2); LB.382(7); TRA.110(1), 113(1), 135(1), 143(3); FAL.375(5), 376(c), 378(3).

*Notes:* Most of the specimens were broken but the average size when complete was probably 4–5 cm. Only faint traces of pigment remain between

the parapodia and some worms are completely pale. Eyes are present just external to the inner lateral occipital antennae. The ceratophore of the median antenna has 10–12 rings but the other antennae are longer and have ceratophores with about 14 rings. The jaws are weakly chitinized and the formula starting with the main fangs is Mx.I = 1 (left) + 1 (right); Mx. II = (5–7) + (6–8); Mx. III = (6–7) + 0; Mx. IV = 7 + 10; Mx. V = 1 + 1. The tentacular cirri are slightly longer than the peristomial segment.

The dorsal cirrus is cirriform throughout. Gills are present as a single filament on the first and all succeeding feet to near the posterior end of the body. As usual the first 5 feet have a cirriform ventral cirrus, and a prominent setigerous lobe and a cirriform 'post-setal lobe'. From the 6th foot onwards the ventral cirrus is represented by a glandular pad, the setigerous lobe becomes inconspicuous and a presetal swelling appears, though the presetal lobe is never well marked. The 'post-setal lobe' diminishes in size and from about the 20th foot it is an inconspicuous conical projection of the foot partially enclosed by a dorsal arc of setae. This seems to be what usually happens in the Onuphidinae.

The first 5 feet bear about 6 pseudocompound setae with bivalve hoods. These setae are all tridentate but the third tooth may be so minute that unless it is seen in profile, it may be thought to be absent. There are also 2–3 simple capillaries. On the 6th foot the pseudocompound setae disappear and the capillaries develop narrow wings. Two bidentate acicular setae appear in the 10th foot and 2 very fine comb-setae with about 18 teeth are present in the 20th foot although they may be present before this. An average foot from the middle of the body thus contains 2 pale acicula with very slender tips projecting from the surface, about a dozen narrow-winged capillaries, 2 fine comb-setae and 2 bidentate acicular setae.

*O. holobranchiata* first described from Japan has been recorded from the Indian ocean by Crossland (1904) and Fauvel (1930, 1932). The pseudocompound setae are variously described as bidentate and tridentate. Hartman (1944) has made a very thorough study of the Onuphidinae of the western hemisphere and under the name *Nothria* describes two species *N. elegans* (Johnson) and *N. iridescens* (Johnson) which, like *O. holobranchiata*, also have gills as simple filaments from the first setiger. She discusses the differences between the three species on p. 88.

### *Onuphis* (*Nothria*) *geophiliformis* (Moore) 1903

*Nothria geophiliformis* Moore 1903, p. 445, pl. 25, figs. 57–59.
*Onuphis geophiliformis* Izuka 1912, p. 103, pl. 11, figs. 8–9.

*Records:* FB.311(10), FAL.219(1), 328(1 juv.).

*Notes:* All the specimens were broken but the largest was approximately 30 mm. long when complete. Most of the specimens are quite pale in alcohol,

but two show brown markings between anterior parapodia and one has the anterior dorsum uniformly brown. The tube is unknown.

Frontal antennae are ovoid, and the occipital antennae have ceratostyles 3–4 times longer than their ceratophores. The median antenna which reaches back to the 6th setiger has a ceratophore with 8–9 rings. Eyes are present external to the inner lateral ceratophores. The tentacular cirri are a little less than the length of the peristomial segment. The jaws are very pale and soft. The mandibles have the usual form and the maxillary formula is Mx. I = (left) 1 + (right) 1; Mx. II = 8 + 9; Mx. III = 8 + 0; Mx. IV. = 6 + 9; Mx. V = 1 + 1.

The parapodia are of the usual form. Gills as single filaments appear on the 4th or 5th setiger, and are always longer than the dorsal cirrus from whose base they arise. They persist over most of the body but are absent from the last 40–50 feet. Each of the first 5 feet has a prominent setigerous lobe but thereafter the setigerous lobe becomes reduced and is hidden between the presetal swelling and the cirriform post-setal lobe. The latter also decreases and at the 12th foot becomes a mere papilla partially encircled by setae. The ventral cirrus is a tapered cirriform organ for the first 5 feet but thereafter becomes a glandular pad and merges with the setigerous lobe at about the 15th foot.

The hooded pseudocompound setae of the first few feet are tridentate with the terminal tooth much longer than the second and third. The winged capillaries are simple, never compound. Hooded and bidentate acicular setae appear in the 9th–10th foot and 2–3 minute comb-setae with about 12 teeth further back.

The above description agrees well with that of Izuka except that he states that eyes are absent and comb-setae have 16 teeth. According to Moore (1911) and Hartman (1944), *O. geophiliformis* is distinguished from *O. pallida* Moore 1911 mainly by the shape of the pseudocompound setae. In the latter species the terminal tooth is no larger than the others.

### *Onuphis* (*Nothria*) *conchylega* Sars 1835

*Onuphis conchylega*. Fauvel 1923, p. 415, fig. 164.

*Records:* TRA.33(1).

## Genus Diopatra

Although *Diopatra* has been regarded as one of the most clearly defined genera of the *Onuphidinae*, distinguished by the spiral arrangement of the filaments on the branchial trunks and the possession of tentacular cirri, it is shown below in the discussion of *Diopatra dubia* that the separation of *Diopatra* from *Epidiopatra* is by no means simple. Moreover the question as to whether there is one species of *Diopatra* or several species is a matter of controversy. Important discussions will be found in Augener (1918), Fauvel (1933), Hartman (1944) and Rullier (1958). Augener divided the genus into two main groups of species

based on the number of teeth on the comb-setae. Fauvel who gives parallel lists of species with few or many teeth on the comb-setae from similar regions, concludes that there is one species with minor variations. Hartman used various characters to distinguish several species in the western hemisphere. Rullier agrees with Fauvel.

I have examined the South African material reported below and material in the British Museum which includes 30 samples labelled *Diopatra neapolitana* from various parts of the world and samples labelled with 10 other specific names. This has shown beyond doubt that there *are* several species and that the synonymy of *Diopatra neapolitana* in particular is very confused. However, once the diagnostic characters are recognized, the specific distinctions are fairly clear. The following characters seem to be of value.

### Pigment pattern

While the intensity of the pigmentation varies from specimen to specimen and the fainter markings fade with age, the pattern is surprisingly constant and the more intense diagnostic marks have persisted in spirit in specimens of *D. neapolitana* collected in the last century.

### Prostomial appendages

These are often called tentacles but are here referred to as antennae as they arise from the prostomium. The frontal antennae are presumable affected by the method of fixation but in one species at least (*D. dubia*) they are characteristic, shovel-like expansions while in others they are sausage-like or subulate. The ceratophores of the five occipital antennae are ringed and the number of rings seems to have a limited variation within a species e.g. 3–5, 6–8, 9–12, 15–20. In *D. dubia* and in *Epidiopatra hupferiana* the rings develop lateral projections so that the ceratophores may be said to be branched. Hartman (1944) has also drawn attention to 'glandular structures on antennae' but unfortunately she does not describe her methods of preparation, and the picture seen varies with the method used. However, if the clear cuticle is stripped from the ceratostyle, a number of depressions formed by oval cells will be found projecting into the thickness of the cuticle. These are usually arranged in 15–25 longitudinal rows or may be irregularly placed.

### Jaws

Most workers are agreed that the maxillae are of no diagnostic value and though this may not be the case, there is variation both in the number of well-formed teeth and in the interpretation of what are teeth and what are not. Incidentally there is some confusion in the numbering of the maxillary plates since the left side has one more plate than the right. Dissection shows that Mx. IV (which are curved plates) correspond, also Mx. I (the main fangs), Mx. II and Mx. V, so that it is Mx. III which is missing from the right side. The mandibles too are usually disregarded, but in at least one species (*D. monroi* described below) the mandibular shafts are characteristically swollen.

### Parapodia

These provide useful characters but the structure of the feet changes over the length of the body and the real nature of the different parts has not been realized. Thus in the first 4 feet, a presetal lobe is not developed, but the setigerous lobe which is oval and compressed has been called a presetal lobe. Further back in the branchiferous region, a true presetal lobe is formed and may be symmetrical or asymmetrical with a marked inferior projection. Towards the end of the branchiferous region the presetal lobe is again reduced to an insignificant swelling in front of the setae. In the anterior region there is what has become known as a cirriform postsetal lobe. This later decreases is size, fuses with the now insignificant setigerous lobe and becomes partially surrounded by a dorsal arc of setae—it becomes, in fact, a small conical setigerous lobe but for convenience, the term postsetal lobe will be retained for anterior feet, and in *D. chiliensis* it is quite characteristic for there are two cirriform postsetal lobes instead of the usual one. A somewhat similar arrangement is described by Willey (1905) for *Diopatra amboinensis* from Ceylon. The ventral cirrus which is cirriform for the first 4 or 5 feet later becomes a ventrolateral glandular pad. The dorsal cirrus is always cirriform but diminishes in size on posterior segments and develops a dorsal branchial trunk on the 4th, 5th or 6th foot. The structure of the gills has been studied by several workers but it seems that the method of preservation has so much effect that only the most marked differences remain constant for a species. Thus the number of branchiferous segments (usually 40–50) may be greater in large specimens and smaller in juveniles. The largest gill is usually the 3rd–6th but in juveniles it may be the first. In well-preserved specimens the branchial trunk is itself spiral but this is not true of compressed specimens removed from a tube. In most species the filaments have a length equal to 3–4 times the thickness of the trunk but in one species the basal filaments are hardly longer than the thickness of the branchial trunk.

### Setae

The pseudocompound setae of the first four feet provide characters of the greatest importance—they may be unidentate, bidentate or tridentate and the guards (or hoods) may be well or poorly developed. The winged capillaries of later feet seem to vary in breadth of wings but the degree of serration at the base of the wing seems to change along the length of the worm. No significant departure from the norm has been noted in the structure of the four tapered acicula which just project from the setigerous lobe. The shape of the bidentate acicular setae seems to be very constant but the number of teeth on the comb-setae and the angle at which they are set seems to be diagnostic within limits. Thus in *D. neapolitana* there are a few large teeth (4–10), in *D. cuprea* there are numerous (15–25) small teeth and in *D. musseraensis* the blade is rolled up like a paper trumpet and at certain angles appears to have a stout central tooth as figured by Augener (1918) and Tebble (1955).

Tube

In most species the projecting end of the tube is beset by shell fragments or other foreign objects such as leaves set edgeways on. In some, however, the tube is composed of hardened mud or sand without shells and Hartman has described one species with a ringed tube.

As mentioned earlier many records have been referred to the species *Diopatra neopolitana* which was regarded by Fauvel as being widely distributed in warmer waters. Among others, most of my own records from South Africa are incorrect and it is convenient before describing new material to redescribe a specimen of *D. neapolitana* from Naples and discuss the tangled synonymy.

*Diopatra neapolitana* Delle Chiaje 1825

(Fig. 9 *a–g*)

*Diopatra neapolitana*. Claparède 1868, p. 122, pl. 6, figs. 4 *a–h*. Ehlers 1868, p. 285, pl. 12, figs. 6–20.

*non Diopatra neapolitana* Crossland 1903, *nec* Day 1934, *nec* Day 1957, *nec* Tebble 1955, *nec* Monro 1936, *nec* Fauvel 1932, *nec* Wasenberg-Lund 1949.

*Material* (from Naples) British Museum numbers 1898: 5: 6: 137–9; 1919.11.6.25/26; 1921.5.1. 1873/74; 1876:10:4:41; 1890.6.7.9.13 other samples in the British Museum labelled *D. neapolitana* from South Africa, West Africa, West Indies, various parts of the Indian Ocean and Australia were not this species.

*Diagnosis:* Pseudocompound setae with a very small secondary tooth and well-developed guards; comb-setae with 4–10 teeth; a dark spot in the middle of the back on branchiferous segments.

*Description:* The following description is based on three British Museum specimens 98.5.6.137/9 from Naples. The specimens are very large, measuring 24 cm. by 5 mm. with over 250 segments. The general colour is brown, darker anteriorly and on the inner sides of the ceratophores of the occipital antennae. There is a short, dark, transverse, mid-dorsal bar on the anterior margin of each of the first 10 branchiferous segments (see fig. 9*e*).

The frontal antennae are tapered and fairly long. The ceratophore of the median occipital antenna has 9–11 rings and is about a third the length of its ceratostyle which has 20–25 broken longitudinal rows of clear cells projecting into the cuticle. The tentacular cirrus is three-quarters the length of the median ceratophore.

The mandibles have calcareous bilobed cutting edges and well chitinized, straight, dark, tapered shafts. The maxillae are also well chitinized and dark. The supports are heart-shaped and the main fangs (Mx. I) are strong. The dental formula is Mx. I (left) = 1 + (right) 1; Mx. II = 8 + 8; Mx. III = 8 + 0; Mx. IV = 7 + 8; Mx. V = 1 + 1. In one large specimen Mx. V = 2 + 2.

The first few feet tend to be bent forward and downward, and the first three (fig. 9*a*) are of the usual form described earlier for the genus *Diopatra*. The first gill occurs on the 4th or 5th foot. The largest gill is on the 7th or 8th foot and it extends two-thirds of the way across the dorsum; it has about 10–12 whorls of branchial filaments. Individual filaments of the basal whorls have a length equal to 3 to 4 times the thickness of the branchial trunk. Succeeding gills decrease slowly in size to end about the 50th foot. The presetal lobe is well marked from the 5th to the 20th foot and in these well-preserved specimens there is an obvious ventral projection (see fig. 9*b*).

The first four feet have 2 superior capillary setae and a fan of 5–6 hooded pseudocompound setae. The latter (fig. 9*d*) usually possess a very small secondary tooth but this may be absent. Pseudocompound setae are absent from the 7th foot and are replaced by winged capillaries which later develop serrations on the base of the wings. Comb-setae (fig. 9*g*) appear on the 8th foot and, tested over the whole length of the body, always have truncate ends with 5–10 coarse teeth. Two bidentate acicular setae (fig. 9*f*) appear on the 15th foot and persist over the rest of the body.

*Discussion:* Neither of the two descriptions given by Delle Chiaje (1825) and (1841) are sufficient for more than generic diagnosis, though the notes on pigmentation vaguely suggest *D. neapolitana*. Quatrefages (1865) described *D. gallica* which according to most authorities is synonymous with *D. neapolitana*, but not having seen the type, I must rely only on the published description which is not sufficiently detailed for *D. neapolitana*. On the other hand both the description of Claparède (1868) and Ehlers (1868) are very good. Claparède's figure 4*D* of the pseudocompound setae probably represents a broken seta but 4*E* shows an unidentate seta and the text states of the pseudocompound seta: '*son extremité se recourbe de manière à constituer une véritable serpe* (4*E*). *Chez quelques individus cette serpe est bidentée.*' If he had added that the secondary tooth is usually rudimentary the matter would have been clearer. His figures 4*H* and 4*J* show comb-setae with 7 and 10 teeth.

Ehlers (1868) gives a detailed description of pigmentation and of the mid-dorsal spot on branchiferous segments. His figures show comb-setae with 8 teeth but the pseudocompound setae were presumably broken off short as often occurs for he took them to be acicula and does not describe pseudocompound setae at all. Crossland (1903) who describes a different pigmentation, strongly bidentate pseudocompound setae and comb-setae with numerous teeth obviously had a different species in front of him. Fauvel (1923), whose figure 166*d* shows a comb-setae with few teeth and figure 166*f* shows a strongly bidentate pseudocompound seta presumably had more than one species before him. Fauvel (1930) and (1932) had specimens with numerous teeth to the comb-setae but the structure of the pseudocompound setae is not stated. Subsequent authors such as myself Day (1934) and (1957), Monro (1937), (1938), Tebble (1955) and Wesenberg-Lund (1949) have followed Crossland and Fauvel.

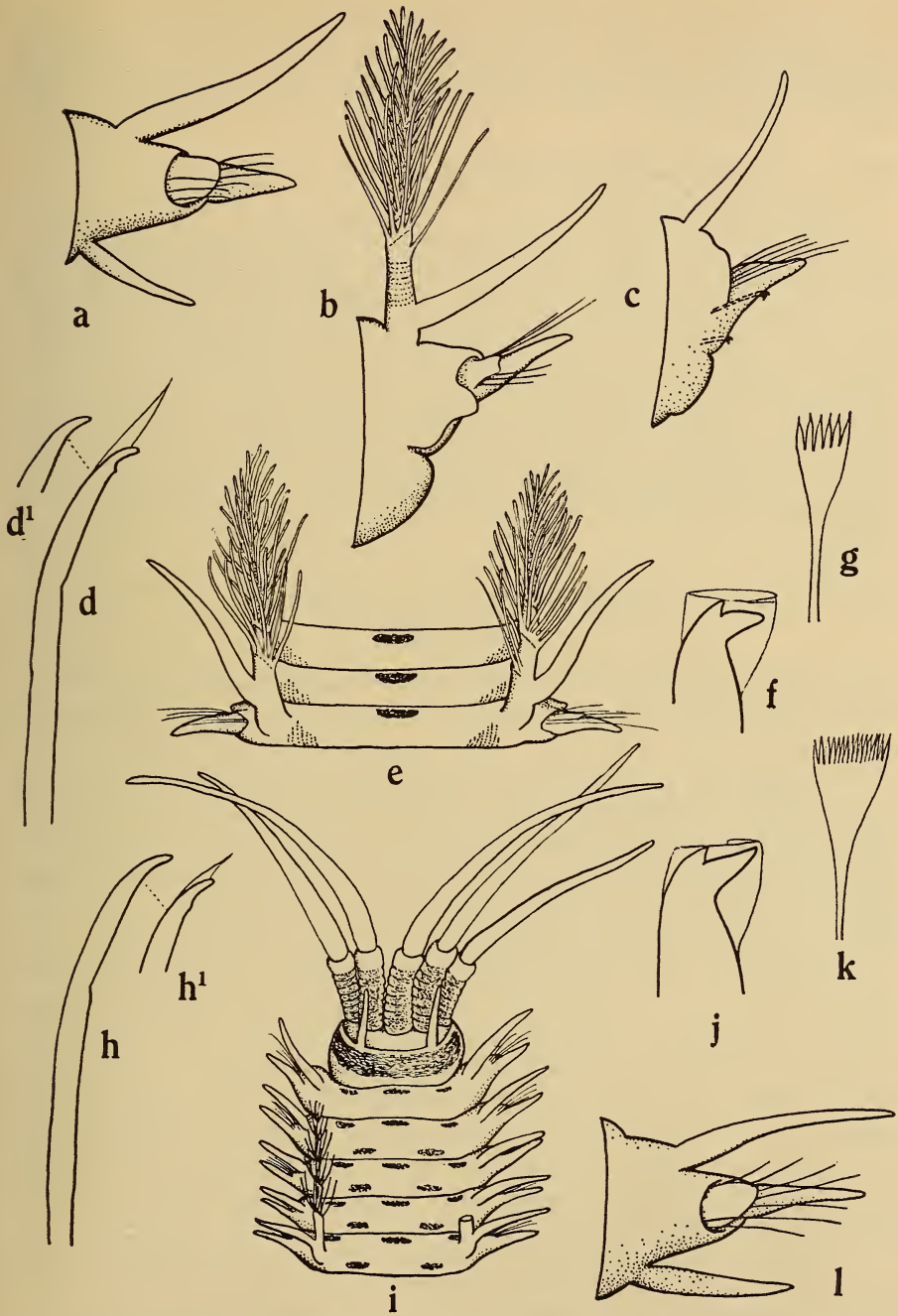


FIG. 9. *Diopatra neapolitana: a* anterior view of 2nd foot; *b* anterior view of 12th foot; *c* anterior view of posterior foot; *d*, $d^1$ pseudocompound seta of 2nd foot and an unidentate variety; *e* 10th segment showing pigmentation; *f* bidentate acicular seta; *g* comb-seta.

*Diopatra neapolitana var. capensis: h*, $h^1$ pseudo-compound seta and variation; *i* anterior end showing pigmentation; *j* bidentate acicular seta; *k* comb-seta; *l* anterior view of 2nd foot.

It would appear then that the true *D. neapolitana* which occurs at Naples and presumably elsewhere in the Mediterranean has often been recorded in error from the Indian Ocean, Australia, South Africa, tropical West Africa and the West Indies.

Note on specimens from Durban Bay

*Record:* DBN.26(6).

After the diagnostic characters of the genus *Diopatra* had been determined, all earlier collections from South Africa were re-examined, and among others the material from Morrumbene Estuary, Inhaca Island and Durban Bay reported by me (Day 1957) as *D. neapolitana*. The Morrumbene and Inhaca specimens proved to be *D. cuprea* but the Durban Bay specimens were *D. neopolitana*. The latter had the characteristic pigmentation, comb-setae with 5–9 teeth, the inferior projection from the presetal lobe of the 6th–12th foot but the pseudocompound setae were more variable than usual. Some were unidentate, some minutely bidentate and some had a well-developed secondary tooth.

*Diopatra neapolitana* var. *capensis* nov.

(Fig. 9 *h–l*)

*Records:* LAM.17(1), 48(4), 55(1), 56(5), 60(3), 63(1); SB.135(1), 181(1), 202(2); AFR.1535(1), 1544(1), 1581(p); TRA.91(1); FAL.209(1); MB.33(2), 34(1), 37(2), 81(4); LIZ.19(p), 23(3), 24(4); SCD.20(4), 63(10).

*Description:* The type is one of the 3 specimens from station LIZ.23 dredged in Algoa Bay at 33°58′S/25°43′E in 38·5 metres on a mud and clay bottom. It is an anterior half of a worm and measures 50 mm. by 4 mm. for 50 segments. The tube is of the usual form with broken shells attached edgeways. The differences between this variety and the stem form concern the colour pattern, the setae, the shape of the gills and the presetal lobe of branchiferous feet.

The central area of the prostomium between the occipital antennae is touched with brown and both the inner and outer faces (but not the sides) of the ceratophores are brown. The peristome (fig. 9*i*) has a continuous transverse bar and the first five setigers have 5 dorsal marks, 3 on the anterior margin and 2 posteriorly thus ¯_¯_¯. Within the next few segments the 3 anterior marks fade but the 2 posterior marks persist to the middle of the branchiferous region.

The cuticle of the occipital antennae has 25 rather irregular rows of clear oval cells projecting into it.

The only obvious difference in the shape of the feet between the Cape and the stem form from Naples, concerns the presetal lobe which, in the stem form, is well developed between the 6th and 15th feet. In this Cape material the inferior projection of the presetal lobe is poorly marked or absent so that the lobe is symmetrical.

The gills appear on the 4th or 5th foot, soon reach a maximum size and thereafter decrease gradually to end about the 50th foot. Each gill has a characteristically long stout trunk and short filaments; thus the basal filaments first appear half-way up the trunk and are not longer than twice the width of the trunk.

The pseudocompound setae of the first feet (fig. 9*h*) are almost always unidentate and only on one specimen was a small rudiment of a secondary tooth found. Moreover this Cape material usually lacks hoods over the apices of the pseudocompound setae and only in a few cases have vestiges of hoods been seen. Comb-setae (fig. 9*k*) with 9–12 rather fine teeth appear about the 12th foot, and bidentate acicular setae (fig. 9*i*) on the 18th foot.

*Juvenile and Epidiopatra stages.* Five young stages were found which varied from 15 mm. to 25 mm. in length. Three of them lacked tentacular cirri but the cirrophores of the occipital antennae were quite normal, 7-ringed and without lateral branches such as commonly occur in *Epidiopatra* species. Pseudocompound setae were unidentate and provided with small hoods. No comb-setae had been developed but bidentate acicular setae were found in posterior feet. Gills were present from the 4th or 5th foot to the 9th, 10th or 11th. The first gill was not only larger than succeeding ones but also better developed. The only markings were brown spots in the intersegmental junctions above the feet in the middle of the body (cf. *D. punctifera* Ehlers).

Two other specimens of the same size possessed tentacular cirri and had better-developed gills from the 4th to the 16th foot. In all other respects they agreed with the Epidiopatra stages.

This evidence, together with that of Monro 1924A who described a juvenile *Diopatra cuprea* from Madeira which also lacked tentacular cirri and the note below (p. 350) which describes the Epidiopatra stages of *Diopatra dubia*, shows that the juveniles of certain species of *Diopatra* lack tentacular cirri. However, this is not always the case. Among empty *Diopatra* tubes dredged from False Bay was a mud cocoon containing 6 post-larval *Diopatras* of 8–15 mm. Each had a normal pair of tentacular cirri, obvious spiral gills and bidentate pseudocompound setae.

### *Diopatra monroi* n. sp.
(Fig. 10 *a–f*)

*Diopatra cuprea* (non Bosc) Augener 1918, p. 530, text-fig. 39 (partim).
*Diopatra punctifera* (non Ehlers) Monro 1930, p. 124, fig. 44 *a–b*; 1936, p. 147.

*Records:* SB.124(1), 208(1); LB.162(3); WCD.26(1); AFR.718(7); TRA.68(abundant), 70(c), 77(c), 88(8), 89(fc); FAL.352(2).

*Diagnosis:* Pseudocompound setae strongly bidentate; mandibles stout and thicker in the middle than at the ends; tube usually of compacted mud.

*Description:* The holotype is one of 7 anterior fragments from AFR.718.D. It is 28 mm. long by 4 mm. wide with 66 segments. The complete worm was

probably twice this length and not fully grown. The general colour is brownish anteriorly and pale posteriorly, but the important features are that there is a dark spot on the prostomium behind the median occipital antenna and the peristome and anterior segments have brown cross bars across the back which are best marked in the branchial region (see fig. 10*c*).

The frontal antennae are ovoid and the five occipital antennae are borne on ceratophores with 6–8 rings. The median antenna is 4–8 times the length of its ceratophore. When the cuticle is skinned off the antenna no clearly marked rows of cells were found projecting into it. If such cells are present they must be poorly developed. No eyes are visible on the prostomium.

The mandibles (fig. 10*b*) are quite characteristic. The cutting edges are normal and white but the supports are black, sausage- or spoon-shaped and curved. Even in juveniles where the mandibles are pale they are thicker in the middle than at the ends. The maxillae on the other hand are always weakly chitinized and brown. The supports are heart-shaped and the main fangs (Mx. I) are soft. The dental formula of the type is: Mx. I = 1 (left) + 1 (right); Mx. II = 5 + 7; Mx. III = 6 + 0; Mx. IV = 5 + 7; Mx. V = 1 + 1.

Dissection of other specimens shows that the number of teeth is not constant so that the average formula is: Mx. I = 1 (left) + 1 (right); Mx. II = (5–7) + (6–8); Mx. III = (6–8) + 0; Mx. IV = (5–10) + (7–10); Mx. V = 1 + 1. The fifth pair of plates are pale with a single dark tooth on the edge of each.

Anterior feet (fig. 10*a*) each have an ovoid and compressed setigerous lobe, tapered dorsal and ventral cirri and a tapered post-setal lobe. The presetal lobe is not developed in the first few feet. The dorsal cirrus persists throughout the branchiferous region but gradually becomes more slender and reduced in size. The ventral cirrus is reduced over the first 5 feet and from the 6th onwards, it is represented by a ventro-lateral glandular pad. The setigerous lobe soon becomes less obvious and on the 6th foot it is concealed behind a low, swollen presetal lobe. The postsetal lobe is gradually reduced in size to a conical papilla. Gills appear on the 5th foot, reach a maximum size by the 8th foot and continue to the 43rd foot. Gill filaments are of normal length and appear fairly near the base of the trunk which is not particularly stout.

The first four feet bear a fan of setae including 1–2 superior simple capillaries and 4–5 pseudocompound setae (fig. 10*e*) each with a strongly bidentate tip covered by a pointed hood. Only the simple capillaries persist and these become more numerous in posterior segments; the blades remain narrow and do not develop serrations at the base. From the 6th or 8th foot comb-setae with 15–25 teeth appear. Bidentate acicular setae with guards (fig. 10*f*) appear about the 16th foot.

The tube is of hardened mud or occasionally of sand and no sign of shells have been seen in many hundreds of specimens examined, even in those from shallow depths where the substratum is sand and shells. This species occurs on

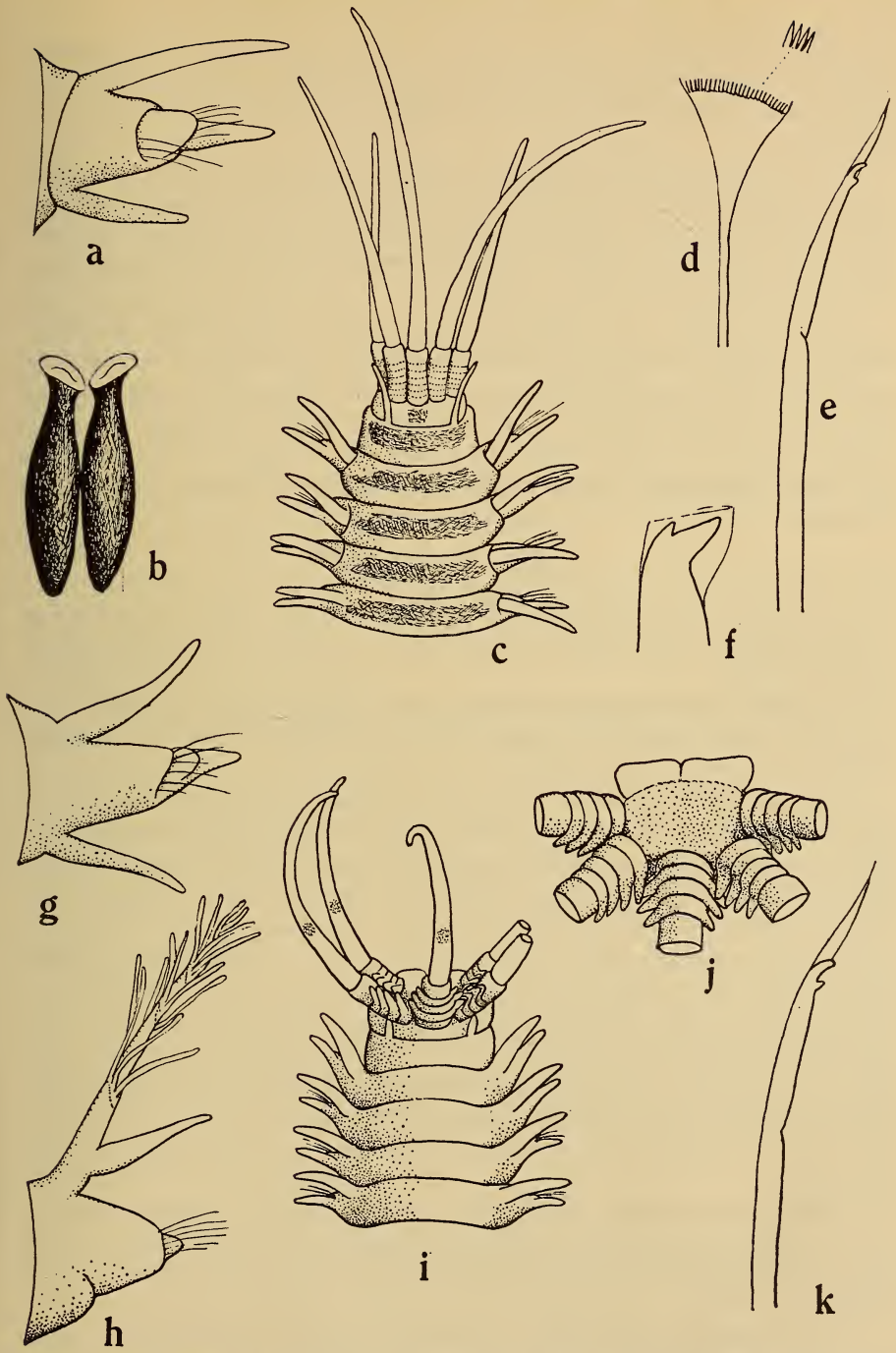


FIG. 10. *Diopatra monroi: a* anterior view of 2nd foot; *b* ventral view of mandibles; *c* anterior end; *d* comb-seta; *e* pseudocompound seta from 2nd foot; *f* bidentate acicular seta.

*Diopatra dubia: g* anterior view of 2nd foot; *h* anterior view of 8th foot; *i* anterior end; *j* anterior view of prostomium with ceratostyles omitted; *k* pseudocompound seta from 2nd foot.

muddy bottoms along the west coasts of South and South West Africa in enormous numbers. The main banks are 60–100 fathoms deep and fishermen report that at times the mud tubes may clog a trawl so that the gear has to be cut away.

I have examined the specimens recorded by Monro (1930) and (1936) as *D. punctifera* and find that they are identical with the specimens described here; equally certainly they are not the *Diopatra punctifera* which Ehlers described from the Agulhas Bank. Monro himself drew attention to the difference in the mandibles which are so characteristic.

By the courtesy of the Director of the Hamburg Museum I was able to examine the three specimens V.8718 recorded by Augener 1918 from Swakopmund under the name of *D. cuprea*. According to Augener they were obtained from mud tubes, and they still retain a dark spot behind the ceratophore of the median antenna and brown cross-bars across anterior segments. The mandibles have stout black spoon-shaped shafts. They are in fact typical examples of *D. monroi*.

*Diopatra dubia* n. sp.

(Fig. 10 *g–k*)

*Records:* TRA.73(2), 80(2), 110(1), 113(1), 143(3); FAL.237(3), 240(3), 352(3), 376(3).

*Diagnosis:* A small species with poorly developed gills, flattened, shovel-like frontal antennae and side branches on the ceratophores of the occipital antennae.

*Description:* The holotype was selected from a collection of 7 specimens from FAL.237.H. It is a well-preserved specimen measuring 23 mm. by 1·8 mm. with 50 segments. The tail end is missing. The tube is rather fragile and composed of flocculent debris, small sand grains and calcareous fragments. The worm is mainly pale but there are golden brown markings anteriorly though in other specimens these may be faint or lacking. The type has flecks forming a rough circle on the slightly concave area of the prostomium between the antennae and 3 paratypes each have a brown spot in the ceratostyle of the occipital antennae. The anterior segments are ringed with brown with a break over the ventral nerve cord and the glandular ventral cirri. The markings are strongest between the parapodia and persist there after they have faded elsewhere. The palps are oval cushions projecting outwards below the frontal antennae.

The frontal antennae (fig. 10*j*) are unusual. Instead of being stout and cylindrical as in most species, they are flattened, much broader than long and rather spade-shaped. In large specimens they are fused for most of their length.

The occipital antennae (fig. 10*i*) all have 5-ringed ceratophores with side projections on each ring except the enlarged terminal one. The median antenna has branches on either side of its ceratophore but the inner laterals and outer

laterals only have branches on their medial sides. The ceratostyles are relatively short, and the whole median occipital antennae only reaches back to setiger 3.

In fresh specimens an internal brown spot may be seen in the ceratostyle. The jaws are very weakly chitinized. The mandibles have calcified cutting edges but their straight, tapered shafts are pale except for narrow black lines on the inner edge of the dorsal surface. The maxillae are equally soft and only the teeth, outer margins and a conspicuous crescentric area medial of Mx. IV is blackened. The supports as usual are heart-shaped and starting with the main fangs (Mx. I) the formula of the holotype may be expressed as: Mx. I = (left) 1 + (right) 1; Mx. II = 9 + 9; Mx. III = 9 + 0; Mx. IV = 6 + 9; Mx. V = 1 + 1. Dissection of other specimens has shown that this formula is higher than most and the range is shown by the figures in brackets: I = 1 (left) + 1 (right); II = (5–9) + (6–9); III = (6–9) + 0; IV = (5–6) + 9; V = 1 + 1.

The peristomium bears a pair of rather short but quite obvious tentacular cirri showing clearly that the type material must be included in the genus *Diopatra* as at present defined.

The anterior feet (fig. 10*g*) are of the usual form. There is an ovoid setigerous lobe with a rather short cirriform post-setal lobe behind it. The cirriform dorsal cirrus above is considerably longer and the cirriform ventral cirrus below is almost as long.

The dorsal cirrus develops a dorsal gill on the 5th foot. However, the gills (fig. 10*h*) are never well developed. The largest gill is the 3rd on the 7th foot and this has only 2–3 whorls of filaments and just reaches across the mid-dorsal line. Thereafter the gills diminish rapidly and in most cases there is only a small dorsolateral tuft of filaments. The last gill occurs on the 30th foot. The postsetal lobe of anterior feet diminishes in size posteriorly, fuses with the setigerous lobe and disappears about the 25th foot. The cirriform ventral cirrus of the first 3–4 feet becomes a ventrolateral pad on later segments. No presetal lobe was distinguished.

Apart from the 4 colourless and tapered acicula present in all feet, the anterior feet each have one superior capillary seta and about 5 pseudocompound setae (fig. 10*k*) with long pointed hoods over the usual strongly bidentate tips. The pseudocompound setae are replaced by winged capillaries on the 6th foot. These increase to 12 and then decrease again to about 4. Bidentate acicular setae with guards appear about the 10th foot and fine comb-setae with 18–20 teeth appear on the 15th.

One specimen (not the holotype) has a complete posterior end which bears two fine cirri below the anus.

The above description of a small species of *Diopatra* with shovel-shaped frontal antennae, branched ceratophores to the occipital antennae and poorly developed gills would seem at first to be an unusually well-defined species of *Diopatra*. However, further samples revealed very similar worms of the same size which *lacked tentacular cirri*. Careful study revealed certain small differences

detailed below but it was obvious that all these forms were very closely related if not mere sexual differences or growth forms of the same species. The question immediately arose as to whether the genera *Diopatra* and *Epidiopatra* are distinct. All the present material was re-examined as well as specimens of *Epidiopatra hupferiana* and *E. drewinensis* from tropical West Africa and Monro's material from False Bay which has been referred by me (Day 1957) to *E. hupferiana* var. *monroi*. It should also be noted that the discovery of a cocoon of *Diopatra neapolitana* var. *capensis* containing newly hatched juveniles 10–20 mm. in length with well-developed tentacular cirri shows that in one species of *Diopatra* at least, these structures are present from the earliest stages. I have finally decided to leave the matter open for the present and merely give the characters of the form with tentacular cirri below.

Notes on an 'Epidiopatra form' of Diopatra dubia

*Records:* TRA.73(3), 74(1), 80(2).

*Notes:* This is a form of *Diopatra dubia* which agrees with the above description with the following exceptions.

Tentacular cirri are absent. Occipital antennae have ceratostyles which are 2–3 times the length of their ceratostyles. The hoods of the pseudocompound setae are considerably longer and the gills are even more poorly developed.

These 'Epidiopatra forms' differ from *Epidiopatra hupferiana* var. *monroi* in pseudocompound setae, in tube formation, in pigmentation, in number of gills and in the shape of the frontal antennae which are broad and flat instead of elongate and cylindrical. Again the ceratophores of the occipital antennae are much more richly branched. The gills are very similar to *E. hupferiana* from tropical West Africa but the other characters are still distinctive and the tubes are not plastered with shell fragments.

### *Diopatra cuprea* (Bosc) 1802

*Diopatra cuprea*. Augener 1918, p. 350, text-fig. 39 (*partim*). Hartman 1944, p. 54, p. 1, figs. 9–14. *Diopatra neapolitana* (non Delle Chiaje) Crossland 1903, p. 132, pl. 14, fig. 1. Day 1934, p. 54. Day 1957, p. 92 (*partim*).

*Notes:* I have re-examined my own specimens from Portuguese East Africa and have compared them with specimens in the British Museum from the Gold Coast. They all agree with Hartman's description of *D. cuprea* collected on the Atlantic coast of the U.S.A. near Bosc's type locality (Charleston). The pigmentation is diffuse brown and no clear pattern could be distinguished, except that there is a dark internal spot at the base of the dorsal cirri of the first two feet. Tentacular cirri are rather longer than usual, almost as long as the ceratophores of the long occipital antennae. When the cuticle was removed from an occipital antenna, 15–20 broken longitudinal rows of clear cells are seen projecting into it. Pseudocompound setae are strongly bidentate and have well-developed hoods. Comb-setae have 18–25 teeth. The presetal lobe of the 5th–15th foot is small and symmetrical.

It is very probable that many of the records of *D. neapolitana* from the Indian Ocean which refer to specimens with bidentate pseudocompound setae and comb-setae with numerous teeth really refer to *D. cuprea*.

### *Diopatra cuprea* var. *punctifera* Ehlers 1908

*Diopatra punctifera* Ehlers 1908*a*, p. 78, pl. 10, figs. 1–11.

*Records:* TRA.143(2); False Bay: 25 records from 7–64 metres on shelly sand; MB.81(3); KNY.6(1); LIZ.3(c); SCD.1(2), 25(c), 26(6), 33(1), 50(c), 58(1), 61(c), 63(3), 74(1), 78(2), 80(1), 94(2).

*Description:* This Cape material differs from tropical specimens of *D. cuprea* in several minor respects but these differences are constant and for this reason it is as well to refer them to a separate variety for the present. The differences concern the pigment pattern, the cuticle of the occipital antennae and the comb-setae.

The colour pattern though often faint shows a transverse row of 4 brown spots across the back of each of the first 4–8 segments near the posterior margin thus - - - -. In the anterior branchiferous region the two inner spots on either side of the mid-dorsal line spread and fuse with the outer spots so that the whole back is brown with a white streak down the middle. When the clear cuticle is removed from one of the occipital antennae, scattered clear cells are found. The comb-setae have rather fewer teeth than in the stem form. In three specimens comb-setae appeared on the 6th, 8th and 9th foot and in different parapodia the number of teeth on the comb-setae was 9, 14, 13, 14, 9, 10, 15, 14, 11, 15, 18 giving a range from 9–18.

The feet are of the usual form without any distinctive features. In the first five the setigerous lobe is oblique and in setigers 8–15 the presetal lobe is symmetrical without any inferior projection.

Ehlers (1908*a*, p. 78) has included *D. neapolitana* as a synonym of *D. cuprea* and records specimens from 16°36′S/11°46′E (off South West Africa), 33°50′S/25°48′E (Port Elizabeth). He states that the colour pattern is variable and his synonymy suggests that he had more than one species in his collections.

*Diopatra punctifera* Ehlers (1908*a*) recorded from the Agulhas Bank at 35°19′S/20°15′E is not clearly described. Setae of the first 4 feet are stated to be '*hellgelebraun, zusammengesetzt: der dunne Schaft läuft mit einem wenig hakenformig gekrümmten, 0·06 mm. langen Endglied aus, das mit einfachen gedeckten Zahn endet, die Deckplatte ist über den Endzahn hinaus verlängert; vereinzelt stehen daneben feine einfache Capillarborsten (Taf. X, fig. 7)*'. Reference to fig. 7 shows neither a simple capillary nor a unidentate pseudocompound seta but a strongly bidentate seta. The comb-seta is shown with numerous teeth.

Dr. Hartwich of the Berlin Museum very kindly sent me the type material of *D. punctifera* for further examination. There are two specimens, both with mud tubes without any shell fragments. The colour is faint and although the

anterior branchiferous region is brownish, no colour pattern remains nor are there any 'eye spots' between the parapodia to which Ehlers refers.

The median ceratophore has 8 rings and the median occpital antenna is a little shorter than the inner laterals with a cuticle which shows a few scattered cells. The tentacular cirri are longer than usual, almost as long as the ceratophores. The mandibles have straight tapered shafts and both the mandibles and the maxillae are weakly chitinized. The maxillary formula is given by Ehlers.

Anterior parapodia are of the usual shape without any peculiarities; there is no presetal lobe other than a swelling from the 6th setiger onward. The gills start on the 5th foot, have fairly slender trunks and filaments whose length is 4–5 times the diameter of the branchial trunk.

The first few feet have 1–2 capillaries and about 4 pseudocompound setae with well-developed hoods and bidentate tips; the secondary tooth is well developed but distinctly smaller and more slender than the terminal one. Bidentate acicular setae of the usual shape first appear on the 15th foot and comb-setae are present on the same foot. The comb-setae are fairly long and have 15–18 fine teeth set on the very slightly oblique blade.

Ehlers's type and my specimens from the same locality agree very well though the colour pattern of the type has faded and the comb-setae have rather more teeth than usual.

### *Epidiopatra gilchristi* n. sp.

(Fig. 11 *a–f*)

*Records:* SCD.33(1), 100(10), 103(2).

*Diagnosis:* A long slender species with a tough, translucent tube which is sometimes annulated (fig. 11*a*).

*Description:* The holotype is an incomplete specimen from SCD.33 partly removed from its annulated tube. It is 55 mm. long by 0·5 mm. wide with more than 150 segments. There appear to be large eggs at the posterior end but the tube is so tough that it is impossible to remove them without damage. The body is creamy brown in alcohol with faint brown spots in the occipital antennae.

The head (fig. 11*d*) bears a pair of subspherical palps, stout subulate frontal antennae and five occipital antennae born on 5 ringed ceratophores. The inner laterals have one or two blunt projections on the basal rings of the ceratophores. The ceratostyles of the median and inner lateral antennae are three times as long as their ceratophores and extend back to setiger 5 but those of the outer laterals are considerably shorter. The head is generally pale in alcohol but there are brown flecks on the prostomium between the antennae and a row of ocular specks may be discerned outside the bases of the inner lateral antennae. The peristome is longer and darker than the succeeding segments. There are no tentacular cirri.

The jaws are pale and very weakly chitinized. The mandibles have white cutting edges and their shafts are so pale that they are hardly distinguishable

from the muscle. They appear to be straight and tapered. The maxillae are mainly colourless but the teeth are tinged with brown and Mx. V are toothless crescents of a darker brown. The dental formula is: Mx. I = 1 (left) + 1 (right); Mx. II = 8 + 7; Mx. III = 7 + 0; Mx. IV = 6 + ?10; Mx. V = 0 + 0. The first three feet are ventro-lateral in origin and are directed forwards. All the lobes are flattened against the side of the body probably due to compression inside the tube. The first foot (fig. 11*e*) has a subulate dorsal cirrus, a low presetal fold, then the setae and then a conical postsetal lobe and an inferior rounded papilla. The ventral cirrus is short and blunt. The next two or three feet are generally similar but thereafter the ventral cirrus is reduced to a low glandular pad and the postsetal lobe decreases in size. The first gill (fig. 11*f*) appears on the fourth foot as an outgrowth from the small dorsal cirrus. It has a stout trunk bearing 6 finger-like filaments in an open spiral. Succeeding gills are smaller and the last arises from setiger 7 so that there are four pairs of gills in all. Specimens dredged off Natal (station NAD.10) also had four pairs but in this case they started on setiger 5. Specimens from SCD.100 and SCD.103 had only one gill on setiger 5.

The post-branchial feet each consist of a fingerlike dorsal cirrus, a rounded setigerous lobe with a sheaf of setae and minute post-setal papilla and below this a cushion-like ventral cirrus.

The setae of the first three feet consist of about 8 stout pseudocompound setae (fig. 11*b*) with strongly bidentate tips and well-marked hoods. The dorsal cirrus contains 3 fine acicula and the setigerous lobe has 3 stout ones whose pointed tips just pierce the surface. In the fourth or fifth foot broad-bladed capillaries appear and by the 6th foot the pseudo-compound setae have gone and the first comb-seta appears. It has about 12 teeth. Two bidentate acicular setae appear in the post-branchial feet.

This species is easily distinguished from *E. hupferiana v. monroi* by the character of its tube (fig. 11*a*).

### *Epidiopatra hupferiana Augener* var. *monroi* Day 1957

*Epidiopatra hupferiana Augener* var. *monroi* Day 1957, p. 92.

*Records:* FAL.219(1), 245(1 juv.), 328(1), 365(1), 376(1), 378(2); MB. 88(1).

*Notes:* The tubes are fragile and covered with debris,—hydroid stems, pieces of alga, shell fragments, mud and flocculent matter. The worms are typical and most have only 3 pairs of gills but a large 60 mm. specimen had 4 pairs. In fresh specimens 4 broad brown streaks extend along the back but these tend to fade to a uniform brown on preservation in alcohol. I have examined Monro's specimen in the British Museum (registered number 1930:10:8:1372) and find it agrees with my type, but the colour has faded and the ceratophores of the occipital antennae lack lateral branches. The latter character is variable.

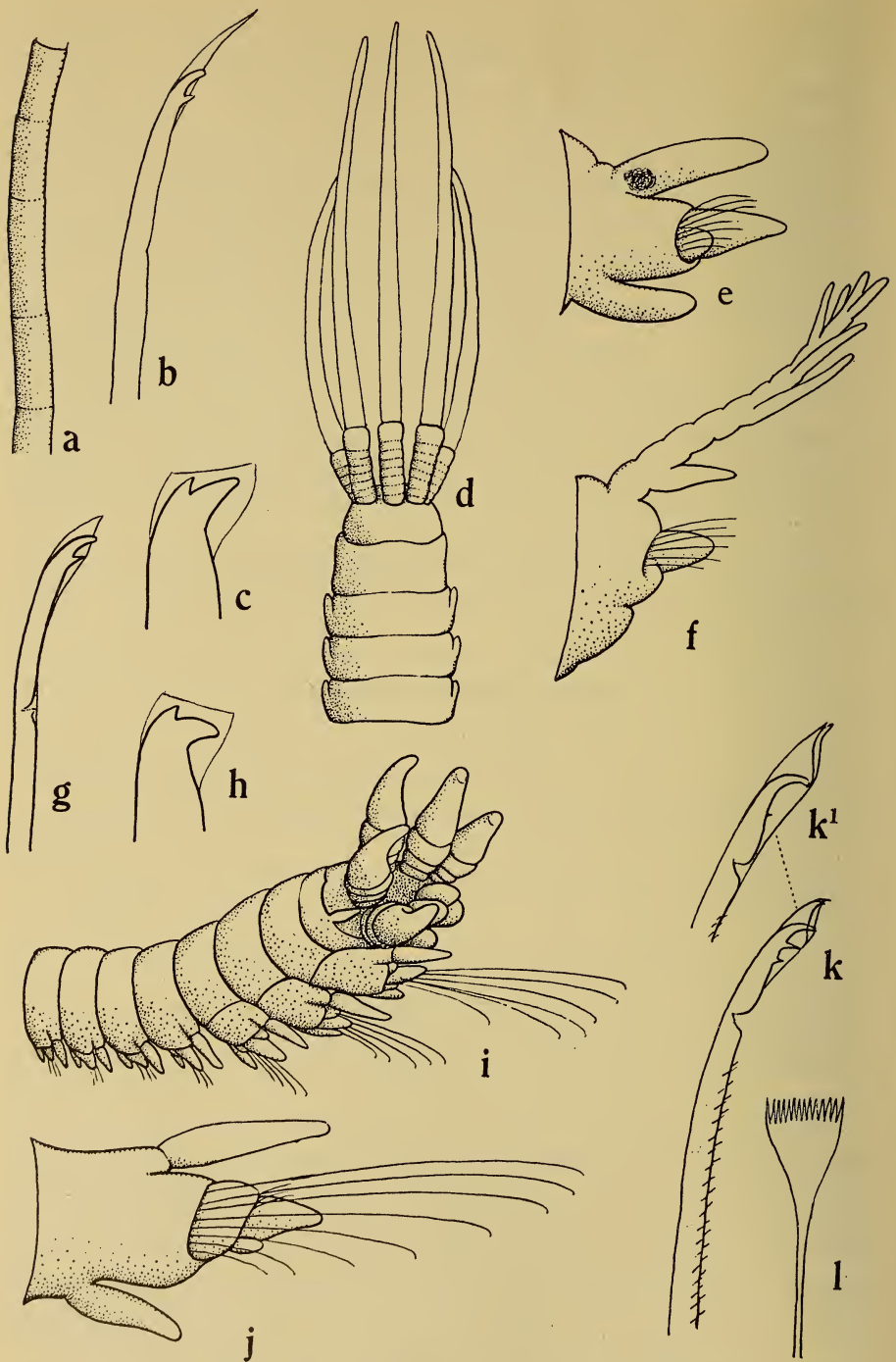


FIG. 11. *Epidiopatra gilchristi: a* Tube; *b* pseudocompound seta from the first foot; *c* bidentate acicular seta; *d* anterior end; *e* anterior view of first foot; *f* anterior view of 4th foot.

*Leptoecia antarctica: g* pseudocompound seta; *h* bidentate acicular seta.

*Rhamphobrachium capense: i*, anterior end; *j* anterior view of first foot; *k*, $k^1$ pseudocompound seta and unidentate variation (LIZ.25); *l* comb-seta.

A juvenile with 42 segments measuring 9 mm. (FAL.245.J) was obtained which probably belongs to this species. The frontal antennae are ovoid, the ceratophores of the occipital antennae have small lateral branches, tentacular cirri are absent and no gills have been developed. It is interesting to note that eye specks are still present behind the inner lateral antennae and the ventral cirri are cirriform on only the first 3 instead of the first 5 feet as in the adult.

*Rhamphobrachium capense* n. sp.

(Fig. 11 *i–l*)

*Records:* TRA.152(1); FB.307(c), 322(1); FAL.58(p), 117(1), 219(c), 378(1); MB.62(1); ?LIZ.25.T(1); SCD.89(2).

*Diagnosis:* Gills as single filaments from 30th–40th foot; anterior pseudocompound setae tri- or bidentate with clawed hoods.

*Description:* The holotype is a well-preserved specimen with 78 segments measuring 34 mm. The tail end is missing. It was selected from among 30 specimens dredged in False Bay. The tube is weakly constructed of mucus with adherent fragments of shells, coralline algae and a few sand grains. Fresh specimens show dark marks on the prostomium, palps, ceratophores of the antennae, parapodia and there are two rows of spots on the dorsum. All of these markings fade in alcohol and the type is colourless apart from tiny black eyespots at the base of the inner lateral antennae.

The prostomium (fig. 11*i*) is ovoid with cushion-like palps, ovoid frontal antennae and 5 short stout occipital antennae which just reach back to setiger 1. Each of these antennae consists of a stout bulbous ceratophore with 2 rings at the base and a slightly longer subulate ceratostyle. The peristomium is narrow and the tentacular cirri when laid forward do not reach the bases of the occipital antennae.

The first few segments are usually tilted upward so that the first two feet point forward, the 3rd–5th obliquely downward and the rest are normally lateral. Anterior feet (fig. 11*j*) have subulate dorsal and ventral cirri, a low presetal lip and two unequal conical postsetal lobes of which the superior is much the larger. The inferior postsetal lobe disappears after the first 3–4 feet. Then the superior postsetal lobe is reduced and on the 12th foot it is no more than a low rounded cone. The dorsal cirrus retains its structure throughout but becomes reduced in size. Between the 30th and 40th segment a single branchial filament grows out from the dorsal cirrus and soon greatly exceeds it in length and continues to near the end of the body. The short ventral cirrus is conical for the first 4 feet, reduced on the 5th and on subsequent segments it forms a ventral glandular pad.

The first three feet each have a few very small capillaries and 12–18 long pseudocompound setae (fig. 11*k*) projecting forward. The apex of each is bidentate or occasionally tridentate though the third tooth is minute and the

bivalve hood which covers the apex terminates in tiny claws. The shaft has two rows of spinules along the inferior margin. In the single specimen from Algoa Bay (LIZ.25.T) which is otherwise similar to the Cape material, the pseudocompound setae were unidentate or minutely bidentate, the shafts had finer spinules and the ends of the hoods though bent, were not clawed.

The next few feet (e.g. the 8th) lose the pseudocompound setae and have about 8 winged capillaries while 2 acicula with long tapered tips project from the surface. In posterior feet either the capillaries are modified to develop long slender tips like the acicula, or the acicula themselves become more numerous and project further from the parapodium. Apart from these very tapered capillaries or acicula there are 2–3 fine comb-setae (fig. 11*l*) with about 12 teeth and 1–2 brown acicular setae with the usual bidentate apex and guards.

This species differs from those previously described by the position and nature of the gills and the structure of the pseudocompound setae.

### *Hyalinoecia tubicola* (Müller) 1788

*Hyalinoecia tubicola.* Fauvel 1923, p. 421, fig. 166 *i–q.*

*Records:* AFR.831(1).

### *Leptoecia antarctica* Monro 1930

(Fig. 11*g*, *h*)

*Leptoecia antarctica* Monro 1930, p. 133, fig. 50.

*Records:* FAL.131(2 juvs.), 159(2); ?SCD.3(8).

*Notes:* The False Bay material agrees well with Monro's specimens dredged off the South Shetland Islands in 1,080 metres. The present specimens are rather smaller, the only complete individual measuring 23 mm. by 0·8 mm. for 70 segments. Tubes are missing. The worms are uniformly pale in spirit, but small eyes are visible external to the bases of the inner lateral occipital antennae.

The frontal antennae are ovoid to sausage-shaped, the occipital antennae have ceratophores with 4 rings and the ceratostyles are at least 5 times the length of their ceratophores. The median antenna which is shorter than the inner laterals reaches back to setiger 8.

Tentacular cirri are absent and the peristome is about the same length as succeeding segments.

The first three feet project outwards and downwards, but succeeding ones change until over most of the body the parapodia are dorsolateral. Dorsal cirri are always cirriform. Anterior ones are approximately equal to the segmental length but over the rest of the body they are much shorter and roughly equal to the setae. The setigerous lobe of the foot is never prominent.

The postsetal lobe is cirriform for the first 3 feet, then decreases and is not distinguishable after the 8th foot. A presetal lobe is not developed. The ventral cirrus is cirriform on the first three feet and thereafter becomes a glandular pad which becomes continuous with the setigerous lobe from about the 10th foot.

The first 3–4 feet contain about 4–6 pseudocompound setae (fig. 11*g*) with bivalve hoods and bidentate apices, the second tooth being much smaller and more slender than the terminal one. Winged capillaries appear about the 4th foot and by the 8th foot there are 4 capillaries with blades well marked off from the shafts. Two bidentate acicular setae (fig. 11*h*) appear in the 9th foot and comb-setae with about 14 teeth further back. An average foot in the middle of the body has 4 winged capillaries, 1–2 fine comb-setae, 2 stout acicula with fine tapered and projecting tips, and 2 bidentate acicular setae with guards.

The posterior end of the body bears 2 pairs of anal cirri which are a little shorter than neighbouring segments.

The above description reveals several minior differences from Monro's types with which the present specimens have been compared. In particular, South African specimens have more elongate frontal antennae, they have eyes and the secondary tooth of the pseudocompound seta is distinctly smaller and smore slender than the terminal one.

The 8 specimens from station SCD.3 are doubtfully referred to *L. antarctica*. The material consists of a number of fine horny tubes up to 40 mm. in length and 0·5 mm. in diameter attached to a stone. The basal parts of the tubes have sand grains attached to them but the distal parts are naked and erect. Moreover several of them are twisted into a fine spiral. The worms inside are of course more slender than the False Bay specimens but seem to agree in structure.

Monro's specimens had mud tubes; the tubes of the False Bay specimens are unknown, and until more is known the identification of the SCD.3 material is doubtful.

## Subfamily Lumbrinerinae

### *Lumbrineris albidentata* Ehlers 1908

(Fig. 12 *a–b*)

*Lumbrinereis albidentata* Ehlers 1908*a*, p. 97, pl. 13, figs. 7–13.

*Records:* AFR.736(p); TRA.41(7), 74(2), 80(6), 110(1), 113(c), 116(1), 143(c), TB.303(1), 309(1); FAL.95(1), 117(1), 206(1), 228(2), 238(2), 241(1), 243(1), 250(1), 251(10), 328(1 juv.), 345(1), 349(1), 375(1 juv.), 378(1); SCD.105(1).

*Notes:* Ehlers's type was small and incomplete and the present material which includes numerous specimens of all sizes, now makes it possible to supplement the original description. The prostomium is conical and there is a dorsal slit at its junction with the peristomium containing nuchal sense organs. The jaws are large and in juvenile specimens the first 3–4 segments are expanded

to accommodate them; in adult specimens this swelling is not noticeable. The mandibles are heavily calcified and the maxillae are quite characteristic, the formula being: Mx. I = 1 + 1; Mx. II = (2–3) + (2–3); Mx. III = 2 + 2; Mx. IV = 0 + 0; the teeth of Mx. II are often edged with white and in one juvenile (AFR.736.Q) gave the impression of having a double row of teeth. Mx. III are very small; Mx. IV are very large plates with a black margin in which a distinct tooth is not differentiated, but the whole forms a cutting edge, thus it is represented in the formula as 0 + 0. The maxillary supports are long and triangular without marked notches at their bases.

Anterior feet (fig. 12*a*) have lamellate lobes which are longer than deep. The presetal lobe is at first small, but in middle feet it is considerably larger, and in posterior feet (fig. 12*b*) it is almost as long as the postsetal lobe. Both lobes project outwards and upwards but are never as long as the setae, and much shorter than the posterior lobes of *L. bifilaris* or *L. meteorana*. Ehlers's type lacked posterior segments so he does not describe this bilabiate condition. There are long compound hooks from the first setiger changing to simple hooks at the 30th setiger and persisting to the end of the body. Winged capillaries are also present from the first foot but these decrease posteriorly so that at the 50th foot there is only one, but thereafter there are usually one or two in most posterior segments. The foot contains four yellow acicula.

### *Lumbrineris* cf. *meteorana* Augener 1931

? *Lumbrinereis meteorana* Augener 1931, p. 300, fig. 8.

*Records:* SB.177(1), 199(1); WCD.23(1), 26(2).

*Notes:* Augener described an anterior and a posterior fragment as follows: Body very slender. Prostomium conical. Mandibles very pale with a tooth-shaped process near the symphysis. Maxillary formula: Mx. I = 1 + 1; II = 5 + 5; III = (1 or 2) + (1 or 2); IV = 1 + 1. Third maxillary plates with indistinct teeth—possibly 1 or possibly 2. Anterior feet with low presetal and postsetal lobes. Posterior feet with long threadlike presetal and postsetal lobes of equal length. Winged capillaries restricted to anterior feet. Hooded compound hooks in the first 20 feet but replaced by simple hooks over the rest of the body. Type locality: 17°13′S/11°43′E, off the coast of Angola.

My specimens agree perfectly with the above description except in regard to the maxillary formula. In my specimens the formula is 1 + 1; 3 + 3; ?2 + ?2; 1 + 1. Mx. II have three very stout almost bilobed teeth and Mx. III is a cutting plate which in some cases shows no teeth at all and in others shows two small projections. Mx. IV is a relatively large plate with a pale centre and a dark edge from which a single tooth projects. It may also be added that the prostomium is oval rather than conical, that the postsetal lobe of anterior feet is only slightly shorter than the postsetal one, that both lobes increase slowly in size over the middle of the body but in the last 20 segments or so both lobes increase enormously to form long threadlike projections. The acicula are pale

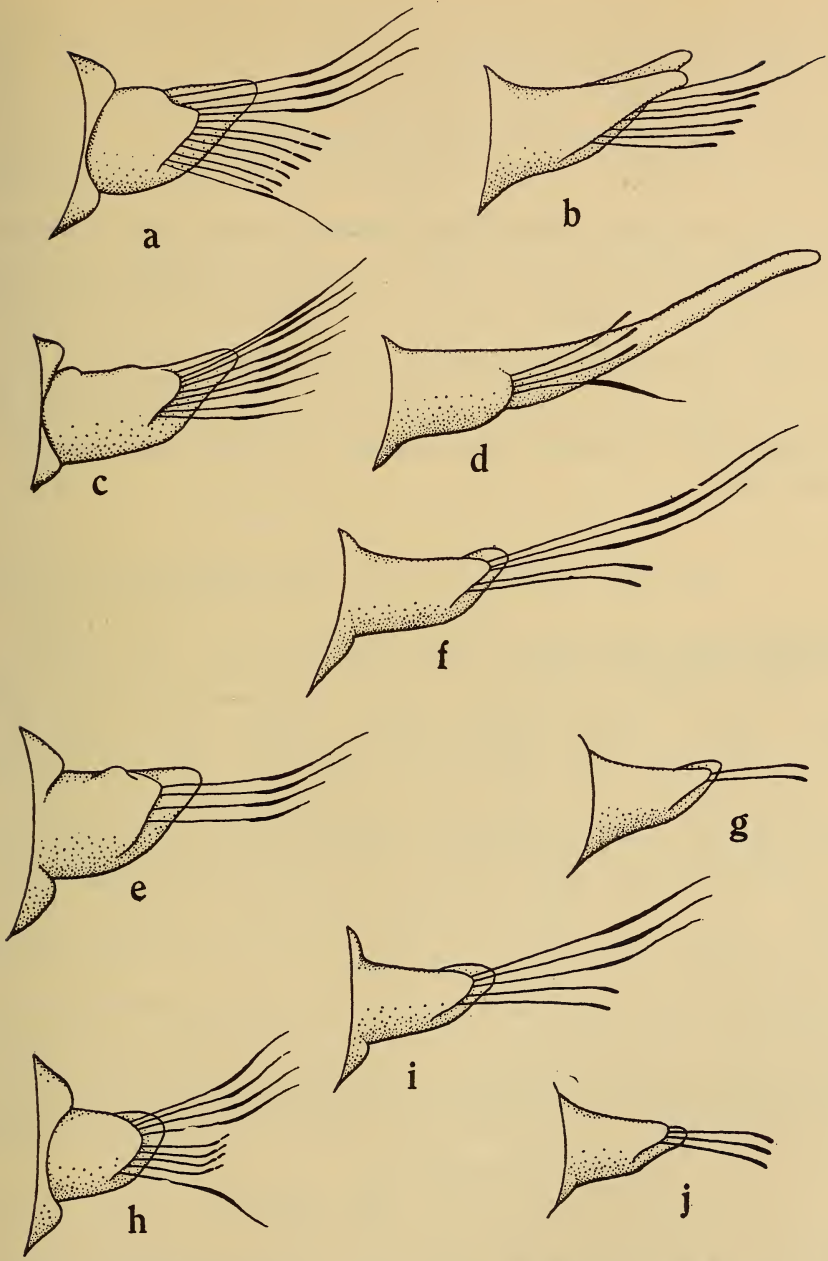


FIG. 12. *Lumbrineris albidentata: a* anterior view of anterior foot; *b* anterior view of posterior foot.

*Lumbrineris heteropoda var. atlantica: c* anterior view of 12th foot; *d* anterior view of posterior foot.

*Lumbrineris brevicirra: e* anterior view of anterior foot: *f* anterior view of middle foot; *g* anterior view of posterior foot.

*Lumbrineris magalhaensis: h* anterior view of anterior foot; *i* anterior view of middle foot; *j* anterior view of posterior foot.

and the hooks change from compound to simple at the 14th foot which is a little earlier than stated by Augener.

Since all the other characters agree so well, the difference in Mx. II is surprising. Augener's type should be re-examined and it may be that the anterior end he described does not belong to the posterior region with bilabiate feet.

My specimens differ from *L. bifilaris* Ehlers in the structure of the maxillae and in having jointed hooks anteriorly. In these characters it is closer to *L. albidentata* Ehlers described above but a side-by-side comparison proves that they are distinct. *L. albidentata* grows to be a much larger, stouter worm but even when compared with a juvenile it is evident that *L. meteorana* is longer and more slender, that Mx. III are larger plates with less distinct teeth, that the postsetal lobe of anterior feet is conical not lamellar and that both lobes of posterior feet are much longer and more threadlike than they are in *L. albidentata.*

*Lumbrineris heteropoda* Marenzeller var. *atlantica* nov.

(Fig. 12 *c–d*)

*Lumbrinereis heteropoda* Monro 1930, p. 137. Monro 1936, p. 154.

*Records:* LAM.44(1); SB.136(1), 179(1), 183(1), 202(4), 203(10); AFR. 882(1), 1224(1), 1535(1), 1545(1), 1554(1), 1576(1), 1335(1); TRA.68(c), 70(c), 71(fc), 77(c), 80(c); WCD.15(6), 19(3), 21(4), 23(9), 26(45), 28(6).

*Notes:* These are very large worms, a complete specimen being over 300 mm. long, 5 mm. wide and iridescent reddish brown in colour when alive.

The prostomium is short and conical and the maxillary formula as usual is Mx. I = 1 + 1; Mx. II = 4 + 5; Mx. III = 2 + 2; Mx. IV = 1 + 1, but the secondary tooth on Mx. III is poorly developed. The maxillary supports are heart-shaped and nearly as broad as long.

In anterior feet (fig. 12*c*) the presetal lobe is short and swollen while the postsetal lobe is ear-shaped and as deep as long. The feet soon increase in length and the postsetal lobe becomes relatively longer until at about the 60th foot it reaches the tips of the capillaries as a finger-shaped organ. In the posterior part of the body (fig. 12*d*) it is much longer than the setae and often three times as long as the basal part of the parapodium.

In anterior feet the setae are all winged capillaries with brown acicula embedded in the flesh. The superior group of capillaries have very long slender blades. Short-bladed simple hooks appear about the 40th foot and for the next 30 segments, both capillaries and hooks are numerous. Thereafter both types of setae become less numerous and in posterior feet there are about 4 hooks and one capillary. It is stressed that capillaries may be found even near the end of the body. The present material has been checked as identical with specimens described by Monro (1930) from Tristan da Cunha and, as has been

shown earlier (Day 1957, p. 94) there are small but constant differences from material recorded in the intertidal zone of the tropical Indian Ocean.

*Lumbrineris cavifrons* Grube 1869

*Lumbrinereis cavifrons*. Day 1953, p. 437, text-fig. 6 *a–d*.

*Records:* TRA.152(1); False Bay: 30 records from 0–35 metres on rock, gravel and shelly sand; MB.49(5), 57(1), 85(1), 87(4); LIZ.2(1), 18(3), 29(2), 35(2); SCD.40(1), 89(1).

*Lumbrineris latreilli* Aud. & M.-E. 1833

*Lumbrinereis latreilli*. Fauvel 1923, p. 431, fig. 171 *m–r*.

*Records:* FB.307(1), 319(1); FAL.334(1); TRA.132(5); SCD.50(1).

*Lumbrineris tetraura* (Schmarda) 1861

*Lumbrinereis impatiens* Claparède, Fauvel 1923, p. 429, fig. 171 *a–i*.
*Lumbrinereis tetraura* Day 1953, p. 435.

*Records:* LAM.22(1), 35(10), 38(1), 49(1), 52(1); SB.189(10); LB.300(c); SH.204(1), 415(1); TB.320(1); WCD.21(1); FB.331(1); FAL.58(p); LIZ.2(6), 27(1).

*Lumbrineris coccinea* (Renieri) 1804

*Lumbrinereis coccinea*. Fauvel 1923, p. 432, fig. 172 *g–n*. Day 1953, p. 436 with synonymy.

*Records:* TRA.122(1); WCD.8(1); FAL.8(p), 113(2), 126(3), 127(1), 144(1), 156(7), 162(3), 171(4), 182(1), 214(2), 269(2), 275(4), 327(1), 371(1).

*Lumbrineris hartmani* Day 1953

*Lumbrinereis hartmani* Day 1953, p. 437, fig. 6 *e–m*.

*Records:* FAL.245(1); MB.23(1), 88(1); LIZ.19(7), 25(3); SCD.58(4), 89(1).

*Notes:* Some of these specimens are much smaller than the holotype and the simple hooks appear as early as the 23rd segment as against the 45th in the type.

*Lumbrineris brevicirra* (Schmarda) 1861

(Fig. 12 *e–g*)

*Notocirrus brevicirrus* Schmarda 1861, p. 117.
*Lumbriconereis brevicirra* Ehlers 1904, p. 35, pl. 4, figs. 13–20; pl. 5, figs. 1–2.

*Records:* TRA.73(1); FAL.359(1).

*Notes:* The present specimens lack a posterior end. The prostomium is short and conical with a nuchal pocket at the junction with the peristome. The

maxillary formula is 1 + 1; 5 + 5; ?2 + ?2; 1 + 1. Mx. III are cutting plates with 1–2 indistinct teeth. The maxillary supports are heart-shaped.

Anterior parapodia (fig. 12*e*) are small and each has a poorly developed presetal lobe and a well-developed postsetal lobe which is compressed, deeper than long and roughly triangular with a superior point, rather like a dog's ear. Towards the middle of the body (fig. 12*f*) the whole foot grows longer, the presetal lobe becomes obvious and the post-setal lobe is reduced; further back still it is similar to, and not much longer than the small pointed presetal lobe (fig. 12*g*). The tail end of the worm is missing.

The anterior setae include both simple hooks and winged capillaries. The capillaries which have very long slender blades, start on the first foot and continue to the middle of the body (about segment 50). The simple hooks appear about the 12th foot and continue to the posterior end (segment 120). The blade is at first very long so that the anterior hooks give the impression of being capillaries with broken tips, but further back the blade decreases in length until it is only 2–3 times as long as broad. The acicula are pale throughout.

This South African specimen has been compared with a New Zealand specimen in the British Museum (No. 1928.2.29.156) identified by Benham (1927). Unfortunately the anterior setae are broken. Ehlers (1904, p. 36) states that Mx. II have 5 teeth on the left and 7 on the right, an unusually high number. However, his figure (p. 5, fig. 1) suggests that the number is smaller as do Schmarda's original drawings.

### *Lumbrineris magalhaensis* Kinberg 1864

(Fig. 12 *h–j*)

*Lumbrinereis pettigrewi* McIntosh 1885, p. 239, pl. 36 figs. 7–9; pl. 17A, figs. 11–15, text-figs. 4–6.
*Lumbrinereis magalhaensis*. Ehlers 1897, p. 74. Monro 1930, p. 135. Hartman 1948, p. 93, pl. 14, figs. 1–3.

*Records:* FAL.352(1). McIntosh's record of *L. pettigrewi* is station 141 dredged in 98 fathoms off the Cape at 34°41'S/18°36'E.

*Notes:* McIntosh's type of *L. pettigrewi* is in the British Museum. An examination showed that the prostomium is long and conical; the dental formula is 1 + 1; 4 + 4; 1 + 1; 1 + 1. The maxillary supports are short and broad with practically no notch at the base, Mx. III are curved cutting plates without a distinct tooth, and are best represented in the formula as 1 + 1. The presetal lip of anterior feet (fig. 12*h*) is a low ridge. The postsetal lobe of anterior feet is flattened, has a rounded edge and is deeper than long, but further back (fig. 12*i*) it becomes more regularly digitiform. Even in the posterior part of the body (fig. 12*j*) it is much shorter than the setae. The presetal lobe increases in size but remains a little shorter than the postsetal lobe throughout. The majority of the setae are broken, but one or two com-

pound hooks remain in the 12th foot of one specimen and a few simple hooks without swollen ends were found in the posterior feet of another specimen. The acicula are yellow. According to McIntosh the capillaries which are very long and slender are restricted to the anterior part of the body. However, his account is very confused for he figures simple hooks in anterior foot of 'a variety', black acicula in one specimen and pale ones in another. Monro 1930 recorded *L. magalhaensis* from South Georgia and his specimens which were examined in the British Museum were found to be practically identical with McIntosh's *L. pettigrewi*. However, the following minor differences were noted. The prostomium is conical but short, the dental formula is the same, but the maxillary supports are slightly longer being 1·5 times as long as broad. In these complete specimens it may be seen that compound hooks are present from the first setiger. The postsetal lobe of anterior feet is again very deep but here not deeper than long. Specimen FAL.352 is an anterior half of a worm which has been compared with the type of *L. pettigrewi* and appears to be identical. In this fresh specimen the setae are unbroken and it can be seen that the compound hooks start in the first foot and persist to the 19th where they are replaced by simple hooks. All hooks have short blades. The parapodial lobes are short throughout and in posterior segments the presetal lobe is only slightly shorter than the postsetal one.

Ehlers (1897) described two forms of prostomium, one long and one short but both conical. This type of variation, probably due to the method of preservation, is quite common in the genus. Ehlers however has made one error in his description. He states that Mx. IV has two teeth. Both McIntosh's specimen of *L. pettigrewi* from the Cape and Monro's specimen of *L. magalhaensis* from South Georgia have Mx. IV in the form of a cutting plate with an undulating edge, but not two distinct teeth.

Hartman (1948) has redescribed Kinberg's type material of *L. magalhaensis* which consists of several specimens. One was without jaws and obviously dissected by Kinberg. In other characters however, this specimen agrees with the description given above, and Kinberg stated that *L. magalhaensis* has Mx. III with one tooth, and this is the interpretation accepted by Ehlers and Monro. Hartman dissected other specimens of the type material and found that in these Mx. III has 2 teeth and the maxillary supports are twice as long as broad. I suggest that these specimens are different from the one dissected and described by Kinberg and seem closer to *L. latreilli*.

### *Arabella iricolor* var. *caerulea* (Schmarda) 1861

*Arabella iricolor* var. *caerulea*. McIntosh 1904, p. 46, pl. 4, figs. 16–17. Day 1953, p. 439, fig. 6*n*.

*Records:* TB.305(1), 319(3); FAL.44(1), 51(1), 58(1), 69(1), 80(1), 235(1), 245(1), 249(2); MB.23(1), 41(1), 42(1), 49(2), 56(5), 67(1), 85(1); LIZ.29(1); SCD.40(2), 89(6).

### *Arabella mutans* (Chamberlin) 1919

*Arabella mutans*. Monro 1933, p. 501.

*Records:* FAL.184(1), 229(p).

*Notes:* These worms have slender bodies with the segments as long as broad. The prostomium is large and oval with four eyes in a line just in front of the prostomium/peristomium junction. The mandibles are strong and black; the maxillae have long filiform supports and a dagger-like median appendage. The first pair of maxillae do not form strong hooks, but all maxillary plates have the anterior tooth stronger than the succeeding ones, the formula being: Mx. I = 8 + 8; Mx. II = 7 + 7; Mx. III = 6 + 6; Mx. IV = 4 + 4; Mx. V = 1 + 1.

Parapodia have a pimple-like dorsal cirrus and no ventral cirrus. The foot has a low rounded presetal lobe and a fingerlike postsetal lobe. Between these are 3–4 winged capillaries with serrations at the base of the blade and two acicula with projecting filiform tips.

### *Drilonereis falcata* Moore 1911

(Fig. 13 *a–e*)

*Drilonereis falcata* Moore 1911, p. 298, pl. 20, figs. 150–154. Hartman 1944, p. 179.
*Drilonereis filum* (non Clap.) Monro 1936, p. 158.

*Records:* FAL.219(1), 352(1).

*Notes:* A single anterior fragment of 66 segments was obtained. The prostomium (fig. 13*a*) is depressed, oval in plan and lacks external eyes though there is a faint suggestion that internal eyes may be present. The mandibles (fig. 13*c*) are stout, black and roughly triangular with a short hinge line. The maxillae (fig. 13*b*) have long filiform supports which are very narrow where they join the main fangs (Mx. I) and a dagger-shaped median piece which is blackened throughout. Mx. I are stout hooks with toothed bases, Mx. II are rectangular with the first tooth rather larger than the rest, Mx. III have an anterior large fang-like tooth and small denticles behind, Mx. IV and V which are very close together, each consist of a single fang. In the following dental formula the difference in size of teeth is not indicated as is sometimes done. Mx. I = 8 + 6; II = 8 + 8; III = 4 + 3; IV = 1 + 1; V = 1 + 1.

The first of the two achaetous segments is largely fused with the prostomium but leaves a crescentric depression on the dorsal surface. Anterior feet (fig. 13*d*) are small and may be partially retracted but succeeding ones rapidly increase in size. There is no dorsal cirrus. The presetal lobe of the foot is a low semi-circular ridge at the base of the bluntly conical postsetal lobe. From the groove between the lobes project a fan of about 6 winged capillaries and the filiform tips of fine acicula may just be seen. A stout yellow aciculum appears on the 18th–24th foot. The parapodia elongate posteriorly (fig. 13*e*) and the aciculum

(sometimes 2) projects further until it almost reaches the end of the conical and rather short postsetal lobe.

The above description agrees with Moore's figures and description apart from minor details. There are more teeth on the main fangs though Moore mentions some obscure crenulations 'as well as 3–4 distinct small teeth'. Hartman states that there are numerous teeth at the base of the forceps. Again Moore shows one large tooth only on Mx. III whereas here there are 2–3 denticles as well, but Hartman states that Mx. III have 4–5 smaller teeth as well as the longer one.

Monro (1936) described a specimen dredged off the Falkland Islands which he referred to *D. filum* while noting the differences from typical European forms of that species. I have examined the specimen in the British Museum, whose registered number is 1936:2:8:2355, and find it to be *D. falcata* so that the range of this species is now from California (0–172 fathoms) to 46°18'S/ 65°02'W (100 m.) and False Bay (18–88 m.).

### *Drilonereis monroi* n. sp.

(Fig. 13 *f–i*)

*Drilonereis* sp. Monro 1930, p. 142.

*Records:* AFR.718(1), 801(1), 1319(1), 1535(1), 1544(1), 1545(1), 1554(1), 1576(1), 1581(1); TRA.68(2), 70(1), 77(2), 88(1), 89(1); FAL.237(1), 240(1).

*Description:* The type was obtained from station AFR.718. It is 220 mm. long by 3 mm. broad for 250 segments. It is rusty red in colour and extremely tough and wiry. The prostomium (fig. 13*f*) is depressed, broadly triangular and lacks eyes. The pharynx usually protrudes slightly. The mandibles are lacking, there being merely toughened skin on the floor of the mouth. The maxillae (fig. 13*g*) have long filiform supports and an unusually short, shield-shaped median piece. Mx. I are stout hooks not denticulate at the base and Mx. V are missing, the formula being Mx. I = 1 + 1; Mx. II = (6–8) + (6–8); Mx. III = 3 + 3; Mx. IV = 1 + 1. On Mx. II and III the first tooth is much larger than the others.

Anterior parapodia (fig. 13*h*) are small but the feet increase in size posteriorly. There are no dorsal or ventral cirri. The presetal lobe of the foot is a low curved ridge and the posterior lobe is a short blunt cone. Between these project a sheaf of winged capillaries and a stout, blunt, yellow aciculum which is evident even on the first foot. Posterior feet (fig. 13*i*) are longer, the superior part of the presetal lobe being more expanded, and about half as long as the postsetal lobe.

The *Drilonereis* sp. described by Monro 1930 from Tristan da Cunha has been compared with these South African specimens and is identical.

This species is related to *D. nuda* Moore described by Hartman (1944) from California and *D. major* Crossland (1924) from Suez and Zanzibar, both

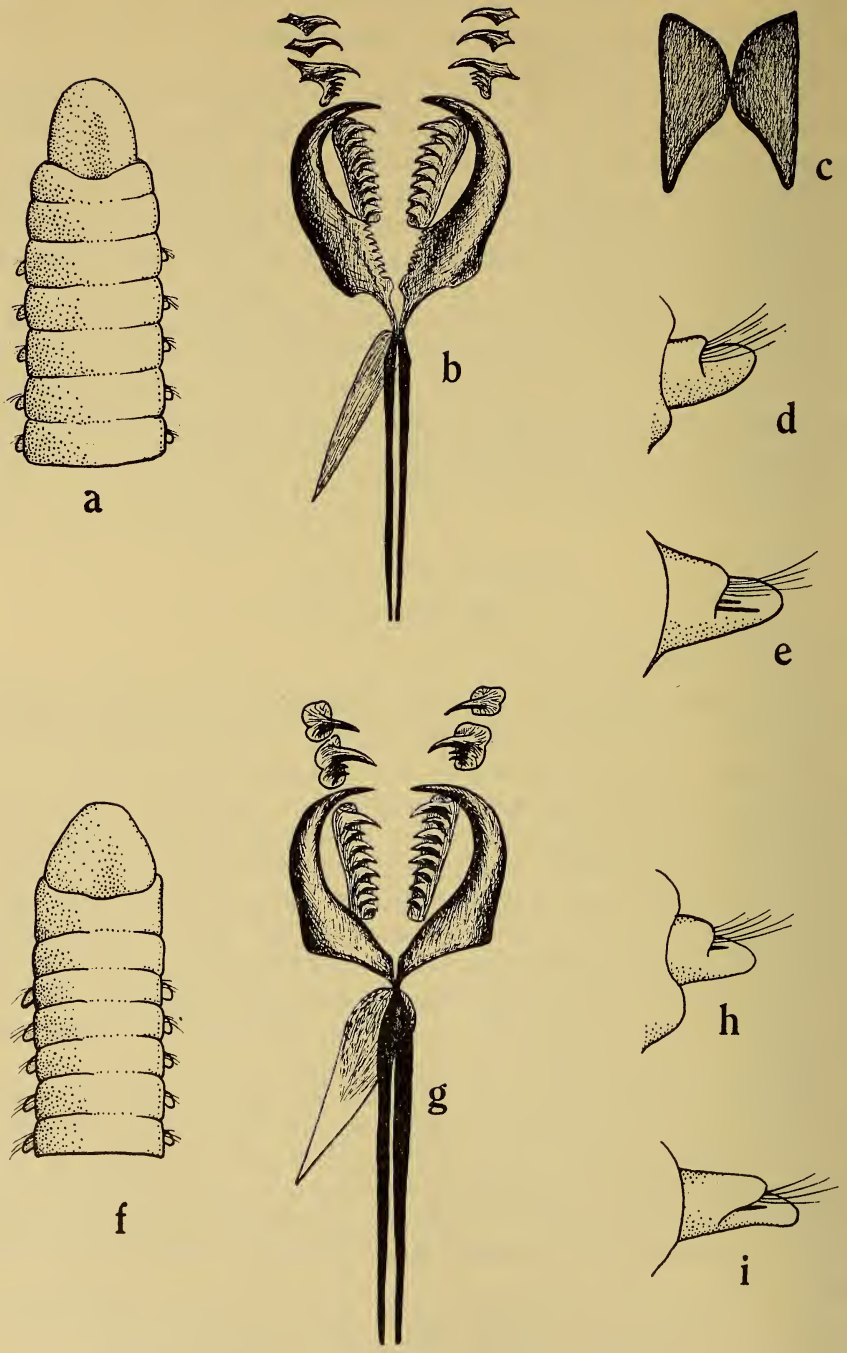


FIG. 13. *Drilonereis falcata: a* anterior end; *b* maxillae; *c* mandibles; *d* anterior foot; *e* posterior foot.

*Drilonereis monroi: f* anterior end; *g* maxillae; *h* anterior foot; *i* posterior foot.

of which lack distinct mandibles. It differs from *D. nuda* in not having teeth at the base of the pincers (Mx. I) and in these respects it is closer to the type of *D. major* which I have dissected and whose dental formula is Mx. I = 1 + 1 (main fangs only); Mx. II = 6 + 6; Mx. III = (3–4) + (3–4); Mx. IV = 3 + 3. However, in *D. major* the teeth on Mx. II are of fairly even size while in *D. monroi* the first tooth is much larger than the rest. There also tend to be fewer teeth on Mx. III + IV but these plates are more variable in all species. Other differences are in the setae which are always longer in *D. monroi*. Moreover the projecting aciculum of *D. monroi* appears in the first foot and in *D. major* in the 15th. It may also be noted that in the posterior feet of *D. major* the presetal lobe remains rudimentary while in *D. monroi* it becomes enlarged,—nearly as long as the postsetal lobe.

*Notocirrus australis* n. sp.
(Fig. 14 *a–d*)

*Records:* FB.306(1); FAL.229(1).

*Description:* The type material from False Bay includes five fragments, two anterior and three posterior ends. It is estimated that a complete worm would measure about 100 mm. by 1 mm. with about 200 segments each about three times as broad as long. The colour is uniformly pale in alcohol.

The prostomium (fig. 14*c*) is conical with 4 eyes in a transverse row at the posterior margin. The outer pair is larger than the inner pair. The jaws consist of well-developed mandibles and maxillae. Each mandible (fig. 14*a*) is strong and triangular and the two are narrowly joined in the median line. The maxillae (fig. 14*b*) consist of five pairs of toothed plates so closely crowded together that it is difficult to distinguish the teeth of one plate from those of the next; in fact plates I and II overlie one another in one specimen and in the other, plates I and II are fused on the left side. The anterior tooth of each plate is hooked and slightly larger than succeeding ones but not to the extent seen in the genus *Drilonereis*. The supports (or 'carriers') are long and slender and the median piece is very faint and pale. The maxillary formula in one specimen is Mx. I = 7 (left) + 7 (right); II = 7 + 8; III = 7 + 6; IV = 5 + 4; V = 1 + 1 and in the other where Mx. I and II are fused on the left side: Mx. I + II = 11 (left) + 7 and 9 (right); III = 9 + 6; IV = 6 + 4; V = 1 + 1.

The first two apodous segments are rather shorter than the subsequent ones, all of which bear well-developed parapodia of increasing size. Each parapodium (fig. 14*d*) has a minute, pimple-like dorsal cirrus above the setigerous lobe. The presetal lobe is rudimentary and the thumb-shaped postsetal lobe is at first almost ventral in position, but in posterior segments it moves round to the normal posterior position. Each parapodium bears about 3 winged capillaries

and a stout yellow needle-like aciculum which projects almost as far as the postsetal lobe. The capillaries have rather broad wings which are smooth except for a few serrations at the base.

The genus *Notocirrus* has most recently been reviewed by Hartman (1944). The present species is closest to *N. lorum* Ehlers from the Magellan area and *N. californiensis* Hartman from Southern California. By the courtesy of the director of the Hamburg Museum I have been able to examine Ehlers's type. Unfortunately the jaws have been removed and I have nothing that I can add to the original description. The main difference between the three species lies in the dental formula of the maxillae. As has been mentioned, these plates are small, crowded together and overlapping, and thus difficult to read. *N. lorum* is reported to have only 4 pairs of maxillary plates but Ehlers's figure 125 suggests that the 4th and 5th dental plates have not been separated. Again it may be that the left MX. II on which three teeth are shown is partially covered by (or possibly fused to) Mx. I. *N. californiensis* is very close to the present species except that Mx. II has 13 teeth on the left side and the usual minute dorsal cirrus is not figured above the parapodium. It is probable that further work will reveal that the maxillae are more variable than has been suspected and a number of species will be sunk in the synonymy.

Fauvel (1923, p. 451) regarded *N. scoticus* McIntosh 1869 as a doubtful species but a re-examination of the type material now in the British Museum (registered numbers 1921-5-1-1681-86) shows that it is definitely a *Notocirrus* though McIntosh's description of the structure of the feet is very confused due to his having inverted his preparation. Thus what he described as a dorsal cirrus is really the postsetal lobe, and what he referred to as a ventral cirrus is really the dorsal cirrus. According to Ehlers (1875, p. 55), *N. scoticus* is a synonym of *N. tricolor* (Johnston) 1865. A brief summary of the characters of the type of *N. scoticus* may now be given. Body brown, rather small for the genus and segments markedly moniliform for the segments are about as broad as long with deep intersegmental constrictions between one and the next. Prostomium conical with two pairs of eyes which fade in alcohol. Jaws consist of a pair of well-developed, triangular mandibles and 4–5 maxillary plates with the usual long supports. The dental formula is doubtful. McIntosh (1910) gives a drawing (p. 62, fig. 9*a*) which shows a number of larger and smaller teeth which may be variously interpreted. One interpretation is Mx. I = (left) 7 + (right) 8; Mx. II = 12 + 7; Mx. III = 6 + 7; Mx. IV = 5 + absent; Mx. V = 1 + absent. The dental apparatus on which his drawing was based has not been preserved; indeed all the jaws of the type material are missing except one from the Porcupine Expedition (registered number 1921-5-1-1685). These jaws are very small and, as usual, difficult to read. My reading is Mx. I = (left) 7 + (right) 8; Mx. II = 6 + 7; Mx. III = 5 + 5; Mx. IV = 3 + 4; Mx. V = doubtful. It will be obvious that the dental formula quoted depends on the inclusion or omission of minute or partially formed denticles on the maxillary plates quite apart from individual variation. The distinction between

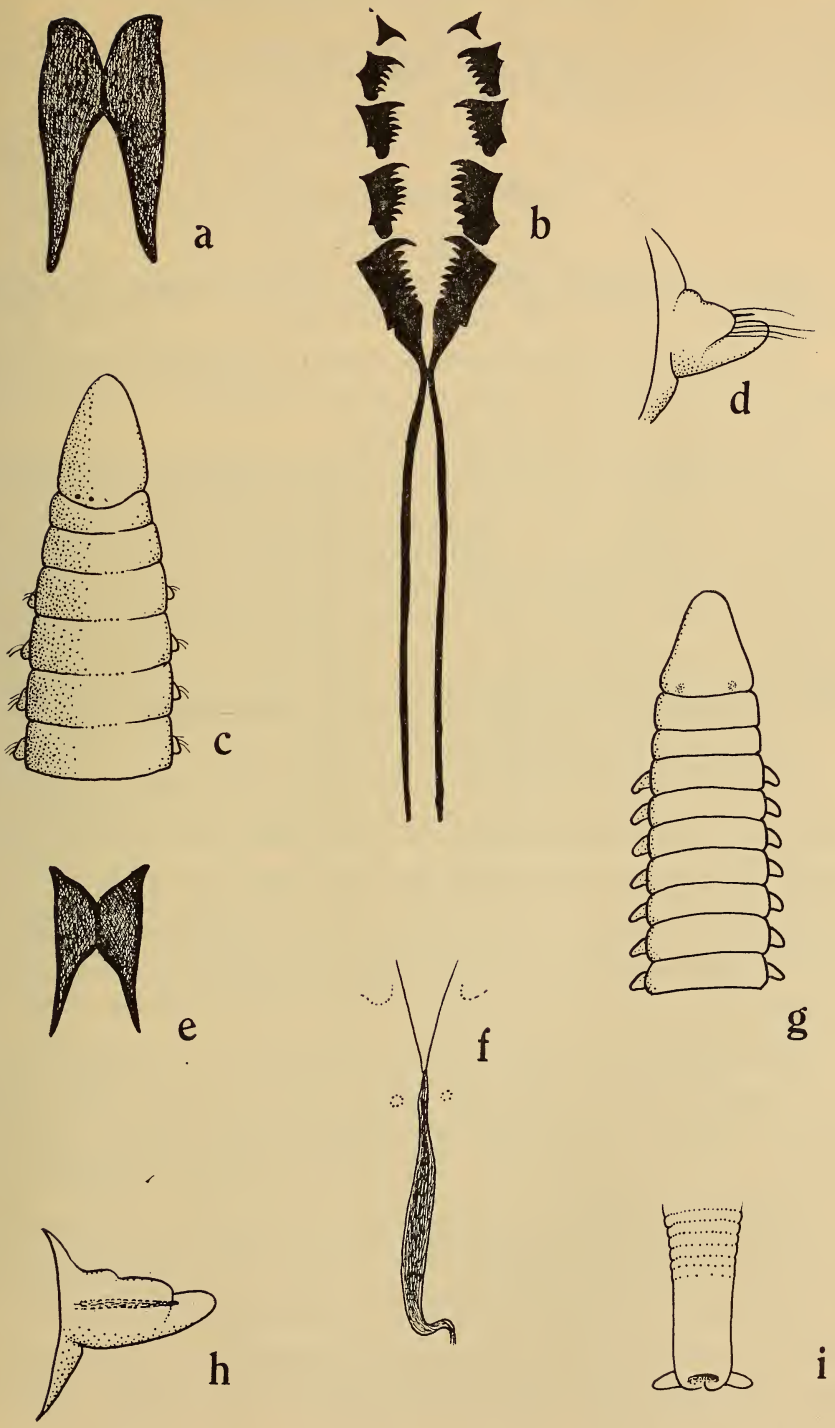


FIG. 14. *Notocirrus australis: a* mandibles; *b* maxillae; *c* anterior end; *d* middle foot. *Drilognathus capensis: e* mandibles; *f* vestiges of maxillae; *g* anterior end; *h* middle foot; *i* posterior end.

individual species of the genus *Notocirrus* rests largely on the dental formula so that one becomes sceptical as to whether there really are several species and not one world-wide one.

### *Drilognathus capensis* n.g. et sp.

(Fig. 14 *e–i*)

*Records:* 5 specimens found in the body cavity of *Onuphis holobranchiata* dredged in Lamberts Bay 18.1.57 (station LAM.11).

The holotype is a complete specimen which is twisted, but if straight would measure about 3 mm. by 0·3 mm. with about 60 segments. The whole worm is creamy white, and is tapered posteriorly.

The prostomium (fig. 14*g*) is well marked off from the succeeding segment. It is ovoid, somewhat tapered anteriorly and lacks appendages. No eyes are visible on the surface but when cleared in glycerine two eyes are visible posteriorly. Dissection of one specimen showed that the mandibles (fig. 14*e*) are well developed and black. They are of the usual *Drilonereis* type and there is no sign of the recurved rostra which has been described for *Labrorostratus parasiticus*. The maxillae (fig. 14*f*) are represented by a blacked cuticular ridge on the dorsal wall of the pharynx. The length of this black cuticular streak is reminiscent of the long maxillary supports of *Drilonereis* and *Arabella* but no fangs or distinct maxillary plates were seen.

The first two segments lack parapodia. Each of these achaetous segments is about 4 times as broad as long. Succeeding segments up to the middle of the body have well-developed parapodia (fig. 14*h*) of the usual *Lumbrinereis* type, though the presetal lobe is rudimentary and even the postsetal lobe is no more than a blunt cone. From the middle of the body onwards the parapodia are progressively reduced, first to mere lateral papillae and eventually over the last 10–15 segments they are entirely lacking. The pygidium however is well developed (fig. 14*i*) and has a pair of large ventro-lateral lobes projecting outwards at right angles to the body.

Each parapodium is supported by a stout aciculum of the *Drilonereis* type. It is a bluntly pointed yellow needle which in most parapodia seems not to pierce the skin, but in some it does, and then just projects in front of the postsetal lobe. There are no other setae, a fact which immediately distinguishes this species from related genera.

Pettibone (1957) gives a most useful key to endoparasitic members of the Arabellidae. It is with considerable hesitation that I name this as a new genus, for according to Pettibone the young stages of *Notocirrus* occur as parasites in the Onuphidae and Pettibone's figures 5L and M of the jaws of *Notocirrus* ? *spiniferus* are not unlike those of the present specimens. However, all the other genera that have been described have setae in the parapodia whereas *Drilognathus* has merely a well-formed aciculum.

## Subfamily Dorvilleinae

### *Dorvillea neglecta* (Fauvel) 1923

*Staurocephalus neglectus* Fauvel 1923, p. 447, fig. 179 *i–q*.
*Dorvillea neglecta* Day 1953, p. 439.

*Records:* SB.183(1); SH.366(1).

### *Dorvillea egena* (Ehlers) 1913

*Stauronereis egena* Ehlers 1913, p. 501, pl. 35, figs. 1–6. Augener 1918, p. 377, pl. 5, fig. 102, 103, text-fig. 40.

*Records:* FAL.284(1).

## References


Augener, H. 1913. Polychaeta I,—Errantia. *In* Michaelsen, W. & Hartmeyer, R., *eds. Die Fauna Südwest-Australiens*, **4**, 65–304. Jena: Fischer.

Augener, H. 1918. Polychaeta. *In* Michaelsen, W., *ed. Beiträge zur Kenntnis der Meeresfauna Westafrikas*, **2**, 67–625. Hamburg: Friederichsen.

Augener, H. 1922. Litorale Polychaeten von Juan Fernandez. *In* Skottsberg, C., *ed. The natural history of Juan Fernandez and Easter Island*, **3**, 161–218. Uppsala.

Augener, H. 1931. Die bodensässigen Polychaeten nebst einer Hirudinee der *Meteor*-Fahrt. *Mitt. zool. St. Inst. Hamb.*, **44**, 279–313.

Baird, W. 1869. Remarks on several genera of Annelides belonging to the group Eunicea, with a notice of such species as are contained in the collection of the British Museum, and a description of some others hitherto undescribed. *J. Linn. Soc.* (*Zool.*), **10**, 341–361.

Benham, W. B. 1927. Polychaeta. *Nat. Hist. Rep. Terra Nova Exped.*, Zool. **7**, 47–182.

Bergström, E. 1914. Zur Systematik des Polychaeten Familie der Phyllodociden. *Zool. Bidr. Uppsala*, **3**, 37–224.

Claparède, E. 1868. Les annélides Chétopodes du Golfe de Naples. *Mém. Soc. Phys. Genève*, **19**, 313–584.

Crossland, C. 1903. The marine fauna of Zanzibar and British East Africa from collections made by Cyril Crossland in the years 1901 and 1902. Polychaeta. Part II. *Proc. zool. Soc. Lond.*, **1903**, **2**, 129–144.

Crossland, C. 1924. Polychaeta of tropical East Africa, the Red Sea and the Cape Verde Islands collected by Cyril Crossland, and of the Maldive Archipelago collected by Professor Stanley Gardiner, M.A., F.R.S. *Proc. zool. Soc. Lond.*, **1924**, 1–106.

Day, J. H. 1934. On a collection of South African Polychaeta, with a catalogue of the species recorded from South Africa, Angola, Mosambique and Madagascar. *J. Linn. Soc.* (*Zool.*), **39**, 15–82.

Day, J. H. 1951. The polychaet fauna of South Africa. Part 1: The intertidal and estuarine Polychaeta of Natal and Mosambique. *Ann. Natal Mus.* **12**, 1–67.

Day, J. H. 1953. The polychaet fauna of South Africa. Part 2: Errant species from Cape shores and estuaries. *Ann. Natal Mus.* **12**, 397–441.

Day, J. H. 1957. The polychaet fauna of South Africa. Part 4: New species and records from Natal and Mocambique. *Ann. Natal Mus.* **14**, 59–129.

Delle Chiaje, S. 1825. *Memorie sulla storia e notomia degli animali senza vertebre del regno di Napoli.* Naples: Stamperia.

Delle Chiaje, S. 1841. *Descrizione e notomia degli animali invertebrati della Sicilia citeriore osservati vivi negli anni* 1822-1830. **3**. Naples.

Ehlers, E. 1864–68. *Die Borstenwürmer* (*Annelida Chaetopoda*) *nach systematischen und anatomischen Untersuchungen dargestellt.* Leipzig: Engelmann.

Ehlers, E. 1875. Beiträge zur Kenntniss der Verticalverbreitung der Borstenwürmer im Meere. *Z. wiss. Zool.* **25**, 1–102.

EHLERS, E. 1897. *Polychaeten. Hamburger magalhaensische Sammelreise.* Hamburg: Friederichsen.
EHLERS, E. 1905. Neuseeländische Anneliden. *Abh. Ges. Wiss. Göttingen*, Math.-phys. Kl. (N.F.) **3**, 1–80.
EHLERS, E. 1908*a*. Die bodensässigen Anneliden aus den Sammlungen der deutschen Tiefsee-Expedition. *Wiss. Ergebn. 'Valdivia'* **16**, 1–167.
EHLERS, E. 1908*b*. Polychaete Anneliden der Angra Pequena-Bucht. *In* Schultze, L. *Zoologische und anthropologische Ergebnisse einer Forschungsreise im westlichen und zentralen Süd-Afrika.* **1**, 43–50. Jena: Fischer. *Denkschr. med.-naturw. Ges. Jena* **13**, 43–50.
EHLERS, E. 1913. Die Polychaeten-Sammlungen der deutschen Südpolar-Expedition 1901–1903. *Dtsch. Südpol.Exped.* **13**, 397–598.
EKMAN, S. 1953. *Zoogeography of the sea.* London: Sidgwick & Jackson.

FAUVEL, P. 1911. Annélides polychètes du golfe Persique recueillies par M. M. Bogoyawlewsky. *Arch. Zool. exp. gèn.* (5), **6**, 353–439.
FAUVEL, P. 1914. Annélides polychètes non-pélagiques provenant des campagnes de l'*Hirondelle* et de la *Princesse-Alice* (1885–1910). *Résult. Camp. sci. Monaco* **46**, 1–432.
FAUVEL, P. 1916. Annélides polychètes des Iles Falkland recueillies par. M. Rupert Vallentin (1902–1910). *Arch. Zool. exp. gén.* **55**, 417–482.
FAUVEL, P. 1919. Annélides polychètes de Madagascar, de Djibouti et du golfe Persique. *Arch. Zool. exp. gén.* **58**, 315–473.
FAUVEL, P. 1923. Polychètes errantes. *Faune Fr.* **5**, 1–488.
FAUVEL, P. 1930. Annelida Polychaeta of the Madras Government Museum. *Bull. Madras Govt. Mus.* (n.s.) Nat. Hist. **1**, 1–72.
FAUVEL, P. 1932. Annelida Polychaeta of the Indian Museum, Calcutta. *Mem. Indian Mus.* **12**, 1–262.
FAUVEL, P. 1933. Annélides polychètes du Golfe du Pei Tcheu Ly de la collection de Musée Hoang ho Pai ho. *Publ. Mus. Hoang ho Pai ho* **15**, 1–67.
FAUVEL, P. 1936. Remarques sur les Néréidiens *Nereis succinea* Leuckart et *Nereis lamellosa* Ehlers. *Bull. Soc. zool. Fr.* **61**, 307–314.

GRAVIER, C. 1901. Contribution à l'étude des annélides polychètes de la Mer Rouge. *Nouv. Arch. Mus. Hist. nat., Paris* (4), **3**, 147–152.
GRAVIER, C. 1906. Sur les annélides polychètes recueillies par l'Expedition Antarctique francaise (Syllidiens). *Bull. Mus. Hist. nat., Paris* **12**, 283–290.
GRUBE, A. E. 1880. Mittheilungen über die Familie der Phyllodoceen und Hesioneen. *Jber. schles. Ges. vaterl. Kult.* **57**, 204–228.

HARTMAN, O. 1944 Polychaetous annelids. Part. 5. Eunicea. *Allan Hancock Pacif. Exped.* **10**, 1–238.
HARTMAN, O. 1948. The marine annelids erected by Kinberg with notes on some other types in the Swedish State Museum. *Ark. Zool.* **42A**, 1–137.
HARTMAN, O. 1950. Goniadidae, Glyceridae and Nephtyidae. *Allan Hancock Pacif. Exped.* **15**, 1–181.
HARTMAN, O. 1956. Polychaetous annelids erected by Treadwell, 1891 to 1948, together with a brief chronology. *Bull. Amer. Mus. nat. Hist.* **109**, 241–310.
HORST, R. 1917. Polychaeta Errantia of the *Siboga* Expedition. Part 2. Aphroditidae and Chrysopetalidae. *Siboga Exped.* **24b**, 1–140.

IZUKA, A. 1912. The errantiate Polychaeta of Japan. *J. Coll. Sci. Tokyo* **30**, art. 2, 1–262.

KINBERG, J. G. H. 1857–1910. Annulater. *In Svenska Fregatten* EUGENIES *Resa omkring jorden . . .* 1851–53. Zool. **3**, 1–78. Uppsala & Stockholm.
KNOX, G. A. 1951. The polychaetous annelids of Banks Peninsula. *Rec. Canterbury (N.Z.) Mus.* **5**, 213–229.
KNOX, G. A. 1957. *Clavisyllis alternata*, gen. et sp. nov., a new polychaete from New Zealand. *Ann. Mag. nat. Hist.* (12), **10**, 493–496.

MCINTOSH, W. C. 1885. Report on the Annelida Polychaeta collected by H.M.S. *Challenger* during the years 1873–1876. *Challenger Rep.* Zool. **12**, 1–554.
MCINTOSH, W. C. 1904. Marine annelids (Polychaeta) of South Africa. *Mar. Invest. S.Afr* **3**, 17–92,

McIntosh, W. C. 1910. *A monograph of the British annelids.* **2**, 233–524, Polychaeta: Syllidae to Ariciidae. London: Ray Society.

McIntosh, W. C. 1925. A second contribution to the marine Polychaeta of South Africa. *Rep. Fish. Mar. biol. Surv. S.Afr.* **4**, Spec. Rep. 4, 1–93.

Monro, C. C. A. 1924. On the Polychaeta collected by H.M.S. *Alert*, 1881–1882. Families Polynoidea, Sigalionidae and Eunicidae. *J. Linn. Soc.* (*Zool.*) **36**, 38–77.

Monro, C. C. A. 1924. On the post-larval stage in *Diopatra cuprea* Bosc, a polychaetous annelid of the family Eunicidae. *Ann. Mag. nat. Hist.* (9) **14**, 193–199.

Monro, C. C. A. 1930. Polychaete worms. '*Discovery*' *Rep.* **2**, 1–222.

Monro, C. C. A. 1933. Notes on a collection of Polychaeta from South Africa. *Ann. Mag. nat. Hist.* (10) **11**, 487–509.

Monro, C. C. A. 1936. Polychaete worms. II. '*Discovery*' *Rep.* **12**, 59–198.

Monro, C. C. A. 1937. Polychaeta. *Sci. Rep. Murray Exped.* **4**, 243–321.

Monro, C. C. A. 1938. On a small collection of Polychaeta from Swan River, Western Australia. *Ann. Mag. nat. Hist.* (11) **2**, 614–624.

Moore, J. P. 1903. Polychaeta from the coastal slope of Japan and from Kamchatka and Bering Sea. *Proc. Acad. nat. Sci. Philad.* **55**, 401–490.

Moore, J. P. 1911. The polychaetous annelids dredged by the U.S.A. *Albatross* off the coast of southern California in 1904. III. Euphrosynidae to Goniadidae. *Proc. Acad. nat. Sci. Philad.* **63**, 234–318.

Morgans, J. F. C. 1959. The benthic ecology of False Bay. Part I: The biology of infratidal rocks, observed by diving, related to that of intertidal rocks. *Trans. roy. Soc. S. Afr.* **35**, 387–442.

Pettibone, M. H. 1948. Two new species of polychaete worms of the family Polynoidae from Puget Sound and San Juan Archipelago. *J. Wash. Acad. Sci.* **38**, 412–414.

Pettibone, M. H. 1957. Endoparasitic annelids of the family Arabellidae with descriptions of new species. *Biol. Bull.* **113**, 170–187.

Potts, F. A. 1910. Polychaeta of the Indian Ocean. Part 2. The Palmyridae, Aphroditidae, Polynoidae, Acoetidae and Sigalionidae. *Trans. Linn. Soc. Lond.* (2), **13**, 325–353.

Quatrefages, A. de 1865. *Histoire naturelle des Annelés marins et d'eau douce.* **1–2**, Annélides et Géphyriens. Paris: Roret.

Ramsay, L. N. G. 1914. Polychaeta of the family Nereidae collected by the Scottish National Antarctic Expedition (1902–1904). *Trans. roy. Soc. Edinb.* **50**, 41–48.

Rullier, F. 1958. Repartition géographique des annélides polychètes. *Bull. Lab. marit. Dinard* **43**, 69–78.

Saint-Joseph, A. de 1888. Les annélides polychètes des côtes de Dinard. Part 2. *Ann. Sci. nat.* (7), **5**, 141–338.

Schmarda, L. K. 1861. *Neue wirbellose Thiere.* **1**, 1–164. Leipzig.

Tebble, N. 1955. The polychaete fauna of the Gold Coast. *Bull. Brit. Mus. nat. Hist.* Zool. **3**, 61–148.

Treadwell, A. L. 1943. Polychaetous annelids from Africa in the collections of the American Museum of Natural History. *Amer. Mus. Novit.* **1221**, 1–6.

Wesenberg-Lund, E. 1949. Polychaetes of the Iranian Gulf. *Dan. sci. Invest. Iran* **4**, 247–400.

Willey, A. 1904. Littoral Polychaeta from the Cape of Good Hope. *Trans. Linn. Soc. Lond.* (2), **9**, 255–268.

Willey, A. 1905. Report on the Polychaeta collected by Professor Herdman at Ceylon in 1902. *In* Herdman, W. A. *Report to the government of Ceylon on the pearl oyster fisheries . . .* **4**, Suppl. Rep. 30, 243–324. London: Royal Society.